Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

QC Batch: 99029
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10416719001, 10416719002

METHOD BLANK: 426697 Matrix: Water
Associated Lab Samples: 10416719001, 10416719002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	01/13/18 11:46	

LABORATORY CONTROL SAMPLE: 426698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	101	90-110	

MATRIX SPIKE SAMPLE: 426700

Parameter	Units	10416719001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.042	21	75-125	M1

SAMPLE DUPLICATE: 426699

Parameter	Units	10416719001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

QC Batch: 517481 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10416719001, 10416719002

METHOD BLANK: 2811522 | Matrix: Water
Associated Lab Samples: 10416719001, 10416719002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.28J	1.2	0.14	01/10/18 14:43	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	01/10/18 14:43	
Sulfate	mg/L	0.42J	1.2	0.27	01/10/18 14:43	

LABORATORY CONTROL SAMPLE: 2811523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.8	95	90-110	
Nitrate as N	mg/L	1	0.90	90	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2811524 2811525

Parameter	Units	10416588002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<0.14	12.5	12.5	12.0	11.9	96	95	90-110	0	20	
Nitrate as N	mg/L	<0.0079	1	1	0.92	0.92	92	92	90-110	0	20	
Sulfate	mg/L	<0.27	12.5	12.5	12.0	11.9	96	96	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

QC Batch: 517662 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10416719001, 10416719002

METHOD BLANK: 2812360 Matrix: Water
Associated Lab Samples: 10416719001, 10416719002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	01/11/18 11:29	

LABORATORY CONTROL SAMPLE: 2812361

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2812362 2812363

Parameter	Units	10416448001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.0075	1	1	0.97	0.94	96	93	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2812364 2812365

Parameter	Units	10416798001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.98	0.94	98	94	90-110	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Minneapolis, MN 55414
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

QC Batch: 519482 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10416719001, 10416719002

METHOD BLANK: 2821083 Matrix: Water
Associated Lab Samples: 10416719001, 10416719002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	01/24/18 14:41	

LABORATORY CONTROL SAMPLE: 2821084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	310	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821085 2821086

Parameter	Units	10416719001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	19.0J	250	250	266	291	99	109	90-110	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821087 2821088

Parameter	Units	10416719002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	265	263	102	101	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

QC Batch: 135153 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10416719001, 10416719002

METHOD BLANK: 538222 | Matrix: Water
Associated Lab Samples: 10416719001, 10416719002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	01/15/18 17:36	

LABORATORY CONTROL SAMPLE: 538223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 538224 538225

Parameter	Units	10416817001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	3.0	25	25	29.1	29.0	105	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 538226 538227

Parameter	Units	10416817002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.9	25	25	29.1	28.8	105	104	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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1700 Elm Street - Suite 200
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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10416719

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416719

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10416719001	**Lashaw-GW-010918**	RSK 175	517857		
10416719002	**Reed-GW-010918**	RSK 175	517857		
10416719001	**Lashaw-GW-010918**	EPA 3010	517604	6010C Met	517738
10416719002	**Reed-GW-010918**	EPA 3010	517604	6010C Met	517738
10416719001	**Lashaw-GW-010918**	EPA 7470A	517610	EPA 7470A	517754
10416719002	**Reed-GW-010918**	EPA 7470A	517610	EPA 7470A	517754
10416719001	**Lashaw-GW-010918**	SM 2320B	518069		
10416719002	**Reed-GW-010918**	SM 2320B	518069		
10416719001	**Lashaw-GW-010918**	SM 2540C	517974		
10416719002	**Reed-GW-010918**	SM 2540C	517974		
10416719001	**Lashaw-GW-010918**	SM 4500-S-2 D	99029		
10416719002	**Reed-GW-010918**	SM 4500-S-2 D	99029		
10416719001	**Lashaw-GW-010918**	EPA 300.0	517481		
10416719002	**Reed-GW-010918**	EPA 300.0	517481		
10416719001	**Lashaw-GW-010918**	EPA 353.2	517662		
10416719002	**Reed-GW-010918**	EPA 353.2	517662		
10416719001	**Lashaw-GW-010918**	EPA 410.4	519482	EPA 410.4	519597
10416719002	**Reed-GW-010918**	EPA 410.4	519482	EPA 410.4	519597
10416719001	**Lashaw-GW-010918**	SM 5310C	135153		
10416719002	**Reed-GW-010918**	SM 5310C	135153		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10416719

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497-39-Rev1
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447*

Regulatory Agency

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2		
1	Lashaw-GW-010918	WT	G	1/9	845	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		001
2	Reed-GW-010918	↓	↓	↓	945	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		002
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature]	1/9/18	1000	[signature] PACE	1/10/18	1000	1.5	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 1/9/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#:10416719

10416719

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9636 4393

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.3 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 1/10/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. no MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Zn Positive for Res. Chlorine? Y N Sample # 1,2: 1/1 1/1 1/1
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1100	Temp: 1.3	Corrected Temp: 1.5
Time: 1120	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/10/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO# : 2068714

2068714

alytical®
pacelabs.com

Workorder: 10416719 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 1/10/2018 **Results Requested By:** 1/24/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	Lashaw-GW-010918	PS	1/9/2018 08:45	10416719001	Water	1	X	
2	Reed-GW-010918	PS	1/9/2018 09:45	10416719002	Water	1	X	
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] Pace	1/10/18 1630		
2	Fed Ex	1/11/18 0825	[illegible] /Pace	1/11/18 0825
3				

Comments

Cooler Temperature on Receipt 5.7 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Page 35 of 38

Pace Analytical

Sample Condition Upo WO# : 2068714

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

PM: CMM Due Date: 01/24/18
F CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ ... ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 1/11/18 JWB

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑ Yes ☐ No ☐ N/A	1
Chain of Custody Present:	☑ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☑ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☑ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes ☑ No ☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☑ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☑ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☑ N/A	9
Sample Labels match COC:	☑ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes ☐ No ☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☑ N/A	14
Trip Blank Present:	☐ Yes ☑ No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: __________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Chain of Custody

WO#:12103579
PM: HRZ Due Date: 01/24/18
CLIENT: PACE MPLS

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Workorder: 10416719 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 1/10/2018 **Results Requested By:** 1/24/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4						Requested Analysis: 5632354 / 5310 TOC												LAB USE ONLY
1	Lashaw-GW-010918	PS	1/9/2018 08:45	10416719001	Water	1						X												
2	Reed-GW-010918	PS	1/9/2018 09:45	10416719002	Water	1						X												
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] PACE	1/10/18 1640	[signature]	1/10/18 1840	
2	[signature]	1/10/18 2300	B Mathews	1/11/18 0630	
3					

Cooler Temperature on Receipt 1.4 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace- MN

Project #: WO#: 12103579
PM: HRZ Due Date: 01/24/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other: ____

Tracking Number: ____

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other: H2O Pac Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.1 Cooler Temp Corrected °C: 1.4 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: JPK 1/10/18

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): ____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather 3D **Date:** 1/11/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

January 17, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Julie Lidstone, GHD
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10416721001	**Reed-GW-010918**	Water	01/09/18 09:45	01/10/18 10:00
10416721002	**Trip Blank**	Water	01/09/18 00:00	01/10/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10416721001	**Reed-GW-010918**	EPA 8260B	DJB	83	PASI-M
10416721002	**Trip Blank**	EPA 8260B	DJB	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 17, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 517654

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2812336)
  - Bromomethane
  - Chloromethane
- LCSD (Lab ID: 2812337)
  - Bromomethane
  - Chloromethane
- MS (Lab ID: 2812338)
  - Bromomethane
  - Chloromethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 517654

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2812336)
  - Bromomethane
  - Chloromethane
- LCSD (Lab ID: 2812337)
  - Bromomethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 17, 2018

QC Batch: 517654

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- Chloromethane
- tert-Butyl Alcohol

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 517654

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Sample: Reed-GW-010918 **Lab ID: 10416721001** Collected: 01/09/18 09:45 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/11/18 14:58	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/11/18 14:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/11/18 14:58	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:58	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/11/18 14:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/11/18 14:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:58	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:58	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/11/18 14:58	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/11/18 14:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:58	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/11/18 14:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/11/18 14:58	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/11/18 14:58	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/11/18 14:58	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/11/18 14:58	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:58	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/11/18 14:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/11/18 14:58	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/11/18 14:58	67-64-1	M1
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/11/18 14:58	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/11/18 14:58	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:58	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:58	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:58	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:58	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/11/18 14:58	74-83-9	M0
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/11/18 14:58	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:58	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/11/18 14:58	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/11/18 14:58	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/11/18 14:58	74-87-3	M0
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	124-48-1	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Sample: Reed-GW-010918 **Lab ID: 10416721001** Collected: 01/09/18 09:45 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/11/18 14:58	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/11/18 14:58	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:58	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/11/18 14:58	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/11/18 14:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/11/18 14:58	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/11/18 14:58	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:58	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/11/18 14:58	109-99-9	M1
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:58	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/11/18 14:58	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/11/18 14:58	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/11/18 14:58	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/11/18 14:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:58	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:58	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/11/18 14:58	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:58	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:58	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/11/18 14:58	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:58	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:58	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/11/18 14:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:58	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:58	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/11/18 14:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-137		1		01/11/18 14:58	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/11/18 14:58	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		01/11/18 14:58	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Sample: Trip Blank **Lab ID: 10416721002** Collected: 01/09/18 00:00 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/11/18 14:12	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/11/18 14:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/11/18 14:12	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/11/18 14:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/11/18 14:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:12	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:12	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/11/18 14:12	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/11/18 14:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/11/18 14:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/11/18 14:12	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/11/18 14:12	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/11/18 14:12	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/11/18 14:12	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/11/18 14:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/11/18 14:12	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/11/18 14:12	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/11/18 14:12	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/11/18 14:12	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:12	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:12	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/11/18 14:12	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/11/18 14:12	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/11/18 14:12	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/11/18 14:12	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/11/18 14:12	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10416721

Sample: Trip Blank **Lab ID: 10416721002** Collected: 01/09/18 00:00 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/11/18 14:12	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/11/18 14:12	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:12	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/11/18 14:12	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/11/18 14:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/11/18 14:12	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/11/18 14:12	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/11/18 14:12	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:12	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/11/18 14:12	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/11/18 14:12	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/11/18 14:12	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/11/18 14:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/11/18 14:12	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/11/18 14:12	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/11/18 14:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:12	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/11/18 14:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-137		1		01/11/18 14:12	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/11/18 14:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		01/11/18 14:12	460-00-4	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

QC Batch: 517654 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10416721001, 10416721002

METHOD BLANK: 2812335 Matrix: Water
Associated Lab Samples: 10416721001, 10416721002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	01/11/18 13:48	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	01/11/18 13:48	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	01/11/18 13:48	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	01/11/18 13:48	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	01/11/18 13:48	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	01/11/18 13:48	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	01/11/18 13:48	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	01/11/18 13:48	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	01/11/18 13:48	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	01/11/18 13:48	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	01/11/18 13:48	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	01/11/18 13:48	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	01/11/18 13:48	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	01/11/18 13:48	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	01/11/18 13:48	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
2-Hexanone	ug/L	<2.5	5.0	2.5	01/11/18 13:48	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	01/11/18 13:48	
Acetone	ug/L	<8.8	20.0	8.8	01/11/18 13:48	
Acrolein	ug/L	<4.8	10.0	4.8	01/11/18 13:48	
Acrylonitrile	ug/L	<4.9	10.0	4.9	01/11/18 13:48	
Benzene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Bromobenzene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
Bromochloromethane	ug/L	<0.38	1.0	0.38	01/11/18 13:48	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
Bromoform	ug/L	<1.0	4.0	1.0	01/11/18 13:48	
Bromomethane	ug/L	<1.5	4.0	1.5	01/11/18 13:48	
Carbon disulfide	ug/L	<0.37	1.0	0.37	01/11/18 13:48	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	01/11/18 13:48	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

METHOD BLANK: 2812335 Matrix: Water
Associated Lab Samples: 10416721001, 10416721002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Chloroethane	ug/L	<0.44	1.0	0.44	01/11/18 13:48	
Chloroform	ug/L	<0.46	1.0	0.46	01/11/18 13:48	
Chloromethane	ug/L	<1.1	4.0	1.1	01/11/18 13:48	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Dibromomethane	ug/L	<0.50	1.0	0.50	01/11/18 13:48	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	01/11/18 13:48	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	01/11/18 13:48	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	01/11/18 13:48	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Ethylbenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	01/11/18 13:48	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
m&p-Xylene	ug/L	<0.24	1.0	0.24	01/11/18 13:48	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Methylene Chloride	ug/L	<1.2	4.0	1.2	01/11/18 13:48	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Naphthalene	ug/L	<0.42	1.0	0.42	01/11/18 13:48	
o-Xylene	ug/L	<0.11	0.50	0.11	01/11/18 13:48	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Styrene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	01/11/18 13:48	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	01/11/18 13:48	
Toluene	ug/L	<0.17	0.50	0.17	01/11/18 13:48	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	01/11/18 13:48	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	01/11/18 13:48	
Trichloroethene	ug/L	<0.18	0.40	0.18	01/11/18 13:48	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Vinyl acetate	ug/L	<1.5	10.0	1.5	01/11/18 13:48	
Vinyl chloride	ug/L	<0.096	0.20	0.096	01/11/18 13:48	
Xylene (Total)	ug/L	<0.24	1.5	0.24	01/11/18 13:48	
1,2-Dichloroethane-d4 (S)	%.	100	75-137		01/11/18 13:48	
4-Bromofluorobenzene (S)	%.	99	75-125		01/11/18 13:48	
Toluene-d8 (S)	%.	99	75-125		01/11/18 13:48	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical
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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

LABORATORY CONTROL SAMPLE & LCSD: 2812336 2812337

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	20.8	103	104	75-136	1	30	
1,1,1-Trichloroethane	ug/L	20	21.1	20.7	106	103	75-129	2	30	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	18.5	97	92	71-138	4	30	
1,1,2-Trichloroethane	ug/L	20	20.9	21.7	104	109	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.0	19.7	100	99	69-126	1	30	
1,1-Dichloroethane	ug/L	20	20.4	20.6	102	103	75-125	1	30	
1,1-Dichloroethene	ug/L	20	21.1	20.4	106	102	75-125	4	30	
1,1-Dichloropropene	ug/L	20	20.4	19.6	102	98	75-125	4	30	
1,2,3-Trichlorobenzene	ug/L	20	18.2	20.9	91	105	75-125	14	30	
1,2,3-Trichloropropane	ug/L	20	20.7	19.7	104	99	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	18.6	95	93	75-125	1	30	
1,2,4-Trimethylbenzene	ug/L	20	18.4	18.2	92	91	75-125	1	30	
1,2-Dibromo-3-chloropropane	ug/L	50	44.7	45.5	89	91	71-130	2	30	
1,2-Dibromoethane (EDB)	ug/L	20	19.8	19.8	99	99	75-125	0	30	
1,2-Dichlorobenzene	ug/L	20	20.1	20.5	100	103	75-125	2	30	
1,2-Dichloroethane	ug/L	20	20.5	19.6	102	98	70-125	4	30	
1,2-Dichloroethene (Total)	ug/L	40	41.1	40.3	103	101	75-125	2	30	
1,2-Dichloropropane	ug/L	20	19.3	19.6	96	98	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	20	19.2	18.3	96	91	75-125	5	30	
1,3-Dichlorobenzene	ug/L	20	19.6	19.4	98	97	75-125	1	30	
1,3-Dichloropropane	ug/L	20	20.6	21.0	103	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	20	19.4	19.3	97	96	75-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	402	494	101	124	64-140	21	30	
2,2,4-Trimethylpentane	ug/L	20	21.2	19.8	106	99	68-125	7	30	
2,2-Dichloropropane	ug/L	20	21.7	21.3	108	107	70-131	2	30	
2-Butanone (MEK)	ug/L	100	108	106	108	106	69-125	2	30	
2-Chlorotoluene	ug/L	20	19.2	19.0	96	95	75-125	1	30	
2-Hexanone	ug/L	100	94.7	94.9	95	95	73-129	0	30	
4-Chlorotoluene	ug/L	20	21.2	20.5	106	103	75-125	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	105	105	73-125	0	30	
Acetone	ug/L	100	96.0	99.7	96	100	66-126	4	30	
Acrolein	ug/L	200	219	215	109	108	56-150	2	30	
Acrylonitrile	ug/L	200	210	205	105	103	68-129	3	30	
Benzene	ug/L	20	20.9	20.8	104	104	75-125	1	30	
Bromobenzene	ug/L	20	20.4	19.2	102	96	75-125	6	30	
Bromochloromethane	ug/L	20	20.7	20.8	103	104	75-126	0	30	
Bromodichloromethane	ug/L	20	19.3	18.7	97	94	75-133	3	30	
Bromoform	ug/L	20	20.5	21.2	102	106	62-142	3	30	
Bromomethane	ug/L	20	39.1	41.8	195	209	34-143	7	30	CH,L3
Carbon disulfide	ug/L	20	21.6	21.0	108	105	71-125	3	30	
Carbon tetrachloride	ug/L	20	20.6	20.6	103	103	71-145	0	30	
Chlorobenzene	ug/L	20	19.8	19.5	99	97	75-125	2	30	
Chloroethane	ug/L	20	18.2	18.7	91	94	75-125	3	30	
Chloroform	ug/L	20	21.1	20.5	106	102	75-125	3	30	
Chloromethane	ug/L	20	33.1	31.2	165	156	54-125	6	30	CH,L3
cis-1,2-Dichloroethene	ug/L	20	20.8	20.5	104	102	75-125	2	30	
cis-1,3-Dichloropropene	ug/L	20	21.9	22.1	110	110	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

LABORATORY CONTROL SAMPLE & LCSD: 2812336 2812337

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	19.7	19.8	99	99	74-141	0	30	
Dibromomethane	ug/L	20	19.8	19.0	99	95	75-125	4	30	
Dichlorodifluoromethane	ug/L	20	19.6	19.3	98	96	59-130	2	30	
Dichlorofluoromethane	ug/L	20	20.1	19.6	101	98	75-125	3	30	
Diisopropyl ether	ug/L	20	22.2	22.0	111	110	69-125	1	30	
Ethyl-tert-butyl ether	ug/L	20	21.4	21.2	107	106	73-125	1	30	
Ethylbenzene	ug/L	20	20.2	20.1	101	100	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	20	20.4	19.9	102	99	75-131	2	30	
Isopropylbenzene (Cumene)	ug/L	20	18.5	18.7	92	94	75-125	1	30	
m&p-Xylene	ug/L	40	39.8	39.4	99	98	75-125	1	30	
Methyl-tert-butyl ether	ug/L	20	20.7	20.7	103	104	75-125	0	30	
Methylene Chloride	ug/L	20	20.4	20.6	102	103	73-125	1	30	
n-Butylbenzene	ug/L	20	18.0	18.1	90	90	75-125	0	30	
n-Propylbenzene	ug/L	20	19.1	18.7	95	94	75-125	2	30	
Naphthalene	ug/L	20	14.8	17.0	74	85	74-125	14	30	
o-Xylene	ug/L	20	17.9	18.1	89	91	75-125	2	30	
p-Isopropyltoluene	ug/L	20	19.8	19.1	99	96	75-125	3	30	
sec-Butylbenzene	ug/L	20	19.2	18.9	96	95	75-125	1	30	
Styrene	ug/L	20	21.2	20.4	106	102	75-125	4	30	
tert-Amylmethyl ether	ug/L	20	20.7	21.4	104	107	71-126	3	30	
tert-Butyl Alcohol	ug/L	200	230	267	115	134	69-131	15	30	L3
tert-Butylbenzene	ug/L	20	18.9	18.5	95	93	75-125	2	30	
Tetrachloroethene	ug/L	20	20.5	20.0	102	100	75-125	2	30	
Tetrahydrofuran	ug/L	200	191	199	96	100	65-127	4	30	
Toluene	ug/L	20	19.8	19.7	99	98	75-125	1	30	
trans-1,2-Dichloroethene	ug/L	20	20.3	19.8	102	99	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	20	19.1	19.3	96	96	75-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	50	50.0	47.0	100	94	30-150	6	30	
Trichloroethene	ug/L	20	20.9	21.2	105	106	75-125	2	30	
Trichlorofluoromethane	ug/L	20	20.0	19.9	100	99	71-140	1	30	
Vinyl acetate	ug/L	20	20.1	19.8	100	99	68-137	2	30	
Vinyl chloride	ug/L	20	20.8	20.4	104	102	70-125	2	30	
Xylene (Total)	ug/L	60	57.6	57.5	96	96	75-125	0	30	
1,2-Dichloroethane-d4 (S)	%.				102	99	75-137			
4-Bromofluorobenzene (S)	%.				100	98	75-125			
Toluene-d8 (S)	%.				98	98	75-125			

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.0	105	75-137	
1,1,1-Trichloroethane	ug/L	<0.15	20	22.2	111	75-139	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20.3	102	60-142	
1,1,2-Trichloroethane	ug/L	<0.22	20	22.1	111	75-128	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	23.6	118	62-150	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	21.3	107	70-129	
1,1-Dichloroethene	ug/L	<0.18	20	21.8	109	67-141	
1,1-Dichloropropene	ug/L	<0.18	20	20.6	103	64-144	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	22.5	112	66-139	
1,2,3-Trichloropropane	ug/L	<0.66	20	20.9	105	69-134	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	21.1	106	65-138	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	19.6	98	65-143	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	46.7	93	61-134	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	19.7	99	74-129	
1,2-Dichlorobenzene	ug/L	<0.21	20	21.8	109	68-135	
1,2-Dichloroethane	ug/L	<0.15	20	20.2	101	73-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40.4	101	69-134	
1,2-Dichloropropane	ug/L	<0.62	20	20.9	104	64-130	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20.2	101	64-146	
1,3-Dichlorobenzene	ug/L	<0.16	20	20.8	104	69-135	
1,3-Dichloropropane	ug/L	<0.13	20	21.3	106	67-128	
1,4-Dichlorobenzene	ug/L	<0.10	20	20.9	104	66-134	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	394	98	58-140	
2,2,4-Trimethylpentane	ug/L	<1.3	20	25.0	125	48-150	
2,2-Dichloropropane	ug/L	<0.40	20	23.3	116	50-150	
2-Butanone (MEK)	ug/L	<2.4	100	105	105	58-125	
2-Chlorotoluene	ug/L	<0.20	20	20.6	103	65-138	
2-Hexanone	ug/L	<2.5	100	96.7	97	61-134	
4-Chlorotoluene	ug/L	<0.13	20	22.1	111	68-135	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	105	105	61-130	
Acetone	ug/L	<8.8	100	167	167	51-140	M1
Acrolein	ug/L	<4.8	200	230	115	48-150	
Acrylonitrile	ug/L	<4.9	200	210	105	55-134	
Benzene	ug/L	<0.13	20	21.1	106	63-132	
Bromobenzene	ug/L	<0.16	20	21.2	106	67-138	
Bromochloromethane	ug/L	<0.38	20	20.9	105	66-138	
Bromodichloromethane	ug/L	<0.20	20	20.5	102	75-137	
Bromoform	ug/L	<1.0	20	21.8	109	65-129	
Bromomethane	ug/L	<1.5	20	45.2	226	41-150	CH,M0
Carbon disulfide	ug/L	<0.37	20	18.5	92	72-132	
Carbon tetrachloride	ug/L	<0.20	20	21.8	109	75-150	
Chlorobenzene	ug/L	<0.14	20	20.5	102	73-127	
Chloroethane	ug/L	<0.44	20	20.1	100	74-138	
Chloroform	ug/L	<0.46	20	21.4	107	74-125	
Chloromethane	ug/L	<1.1	20	32.9	164	58-129	CH,M0
cis-1,2-Dichloroethene	ug/L	<0.20	20	20.4	102	63-135	
cis-1,3-Dichloropropene	ug/L	<0.12	20	22.0	110	66-129	
Dibromochloromethane	ug/L	<0.13	20	20.3	101	75-133	
Dibromomethane	ug/L	<0.50	20	20.8	104	68-134	
Dichlorodifluoromethane	ug/L	<0.31	20	23.9	120	72-150	
Dichlorofluoromethane	ug/L	<0.38	20	20.5	102	75-129	
Diisopropyl ether	ug/L	<0.12	20	22.3	111	62-128	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	22.1	111	63-132	
Ethylbenzene	ug/L	<0.14	20	20.8	104	72-130	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	24.3	122	71-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	19.4	97	70-136	
m&p-Xylene	ug/L	<0.24	40	41.0	102	64-142	
Methyl-tert-butyl ether	ug/L	<0.14	20	21.2	106	72-125	
Methylene Chloride	ug/L	<1.2	20	20.3	102	60-132	
n-Butylbenzene	ug/L	<0.13	20	20.6	103	60-150	
n-Propylbenzene	ug/L	<0.12	20	20.0	100	63-142	
Naphthalene	ug/L	<0.42	20	17.5	88	67-125	
o-Xylene	ug/L	<0.11	20	18.1	91	60-143	
p-Isopropyltoluene	ug/L	<0.14	20	21.7	108	64-146	
sec-Butylbenzene	ug/L	<0.12	20	21.6	108	67-144	
Styrene	ug/L	<0.14	20	21.5	108	67-136	
tert-Amylmethyl ether	ug/L	<0.12	20	21.7	109	60-134	
tert-Butyl Alcohol	ug/L	<2.2	200	262	131	56-146	
tert-Butylbenzene	ug/L	<0.15	20	20.2	101	68-135	
Tetrachloroethene	ug/L	<0.16	20	20.9	105	67-148	
Tetrahydrofuran	ug/L	<4.3	200	325	162	51-141	M1
Toluene	ug/L	<0.17	20	20.0	100	61-140	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20.0	100	62-138	
trans-1,3-Dichloropropene	ug/L	<0.14	20	19.8	99	67-134	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	53.3	107	30-150	
Trichloroethene	ug/L	<0.18	20	21.6	108	64-149	
Trichlorofluoromethane	ug/L	<0.13	20	23.2	116	75-150	
Vinyl acetate	ug/L	<1.5	20	20.7	103	49-143	
Vinyl chloride	ug/L	<0.096	20	22.9	114	75-133	
Xylene (Total)	ug/L	<0.24	60	59.1	98	63-142	
1,2-Dichloroethane-d4 (S)	%.				98	75-137	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				97	75-125	

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	0.89	0.85	4	30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	101	102	2		
4-Bromofluorobenzene (S)	%.	98	100	1		
Toluene-d8 (S)	%.	96	101	5		

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10416721

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 517654

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416721

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10416721001	**Reed-GW-010918**	EPA 8260B	517654		
10416721002	**Trip Blank**	EPA 8260B	517654		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10416721

Page: 1 Of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497-39-Rev1
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2			
1	Reed-GW-010918	WT	G	1/9	945	–	–	–	3				X				X												001
2	Trip Blank	↓	↓	↓	–	–	–	–	2				X				X											002	1 set per order
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	1/9/18	1600	[signature] Pace	1/10/18	1000	1.5	Y	X	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 1/9/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: F-MN-L-210-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#:10416721

10416721

Proj. Due Date: Proj. Name:

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9636 4393

Custody Seal on Cooler/Box Present? ☑Yes ☐No **Seals Intact?** ☑Yes ☐No

Packing Material: ☑Bubble Wrap ☑Bubble Bags ☐None ☐Other: **Temp Blank?** ☑Yes ☐No

Thermometer Used: ☑151401163 ☐G87A9155100842 **Type of Ice:** ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 1.3 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐Yes ☐No ☑NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 1/10/18

USDA Regulated Soil (☑N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑Yes	☐No		1.
Chain of Custody Filled Out?	☑Yes	☐No		2.
Chain of Custody Relinquished?	☑Yes	☐No		3.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☑Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		6.
Rush Turn Around Time Requested?	☐Yes	☑No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐Yes	☑No		8. no ms/msd
Correct Containers Used? -Pace Containers Used?	☑Yes ☑Yes	☐No ☐No		9.
Containers Intact?	☑Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☑N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☑No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☑No	☐N/A	15. only 2 trip blanks shared w/ WO 10416722
Trip Blank Custody Seals Present?	☐Yes	☑No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1100	Temp: 1.3	Corrected Temp: 1.5
Time: 1120	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/10/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of t]his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 17, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Julie Lidstone, GHD
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10416722

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10416722001	**Lashaw-GW-010918**	Water	01/09/18 08:45	01/10/18 10:00
10416722002	**Trip Blank**	Water	01/09/18 00:00	01/10/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10416722001	**Lashaw-GW-010918**	EPA 8260B	DJB	83	PASI-M
10416722002	**Trip Blank**	EPA 8260B	DJB	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10416722001	**Lashaw-GW-010918**					
EPA 8260B	Carbon tetrachloride	0.89	ug/L	0.50	01/11/18 15:22	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 17, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 517654

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- LCS (Lab ID: 2812336)
  - Bromomethane
  - Chloromethane
- LCSD (Lab ID: 2812337)
  - Bromomethane
  - Chloromethane
- MS (Lab ID: 2812338)
  - Bromomethane
  - Chloromethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 517654

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
- LCS (Lab ID: 2812336)
  - Bromomethane
  - Chloromethane
- LCSD (Lab ID: 2812337)
  - Bromomethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 17, 2018

QC Batch: 517654

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- Chloromethane
- tert-Butyl Alcohol

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 517654

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Sample: Lashaw-GW-010918 **Lab ID: 10416722001** Collected: 01/09/18 08:45 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 15:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/11/18 15:22	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/11/18 15:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/11/18 15:22	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 15:22	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 15:22	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/11/18 15:22	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 15:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/11/18 15:22	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/11/18 15:22	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/11/18 15:22	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 15:22	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 15:22	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/11/18 15:22	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/11/18 15:22	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 15:22	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 15:22	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/11/18 15:22	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/11/18 15:22	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/11/18 15:22	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/11/18 15:22	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/11/18 15:22	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 15:22	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/11/18 15:22	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/11/18 15:22	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/11/18 15:22	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/11/18 15:22	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/11/18 15:22	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 15:22	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 15:22	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/11/18 15:22	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/11/18 15:22	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/11/18 15:22	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/11/18 15:22	75-15-0	
Carbon tetrachloride	**0.89**	ug/L	0.50	0.20	1		01/11/18 15:22	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/11/18 15:22	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/11/18 15:22	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/11/18 15:22	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Sample: Lashaw-GW-010918 **Lab ID: 10416722001** Collected: 01/09/18 08:45 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/11/18 15:22	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/11/18 15:22	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 15:22	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/11/18 15:22	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/11/18 15:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/11/18 15:22	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/11/18 15:22	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 15:22	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/11/18 15:22	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/11/18 15:22	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/11/18 15:22	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/11/18 15:22	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/11/18 15:22	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/11/18 15:22	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 15:22	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 15:22	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/11/18 15:22	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 15:22	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 15:22	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/11/18 15:22	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 15:22	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/11/18 15:22	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/11/18 15:22	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/11/18 15:22	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 15:22	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 15:22	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/11/18 15:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-137		1		01/11/18 15:22	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		01/11/18 15:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		01/11/18 15:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Sample: Trip Blank **Lab ID: 10416722002** Collected: 01/09/18 00:00 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/11/18 14:12	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/11/18 14:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/11/18 14:12	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/11/18 14:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/11/18 14:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:12	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:12	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/11/18 14:12	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/11/18 14:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/11/18 14:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/11/18 14:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/11/18 14:12	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/11/18 14:12	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/11/18 14:12	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/11/18 14:12	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/11/18 14:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/11/18 14:12	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/11/18 14:12	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/11/18 14:12	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/11/18 14:12	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:12	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/11/18 14:12	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/11/18 14:12	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/11/18 14:12	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/11/18 14:12	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/11/18 14:12	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/11/18 14:12	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Sample: Trip Blank **Lab ID: 10416722002** Collected: 01/09/18 00:00 Received: 01/10/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/11/18 14:12	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/11/18 14:12	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/11/18 14:12	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/11/18 14:12	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/11/18 14:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/11/18 14:12	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/11/18 14:12	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/11/18 14:12	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/11/18 14:12	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/11/18 14:12	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/11/18 14:12	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/11/18 14:12	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/11/18 14:12	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/11/18 14:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/11/18 14:12	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/11/18 14:12	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/11/18 14:12	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/11/18 14:12	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/11/18 14:12	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/11/18 14:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/11/18 14:12	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/11/18 14:12	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/11/18 14:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/11/18 14:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-137		1		01/11/18 14:12	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/11/18 14:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		01/11/18 14:12	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

QC Batch: 517654 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10416722001, 10416722002

METHOD BLANK: 2812335 Matrix: Water
Associated Lab Samples: 10416722001, 10416722002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	01/11/18 13:48	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	01/11/18 13:48	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	01/11/18 13:48	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	01/11/18 13:48	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	01/11/18 13:48	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	01/11/18 13:48	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	01/11/18 13:48	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	01/11/18 13:48	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	01/11/18 13:48	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	01/11/18 13:48	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	01/11/18 13:48	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	01/11/18 13:48	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	01/11/18 13:48	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	01/11/18 13:48	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	01/11/18 13:48	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	01/11/18 13:48	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
2-Hexanone	ug/L	<2.5	5.0	2.5	01/11/18 13:48	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	01/11/18 13:48	
Acetone	ug/L	<8.8	20.0	8.8	01/11/18 13:48	
Acrolein	ug/L	<4.8	10.0	4.8	01/11/18 13:48	
Acrylonitrile	ug/L	<4.9	10.0	4.9	01/11/18 13:48	
Benzene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Bromobenzene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
Bromochloromethane	ug/L	<0.38	1.0	0.38	01/11/18 13:48	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
Bromoform	ug/L	<1.0	4.0	1.0	01/11/18 13:48	
Bromomethane	ug/L	<1.5	4.0	1.5	01/11/18 13:48	
Carbon disulfide	ug/L	<0.37	1.0	0.37	01/11/18 13:48	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	01/11/18 13:48	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

METHOD BLANK: 2812335 Matrix: Water
Associated Lab Samples: 10416722001, 10416722002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Chloroethane	ug/L	<0.44	1.0	0.44	01/11/18 13:48	
Chloroform	ug/L	<0.46	1.0	0.46	01/11/18 13:48	
Chloromethane	ug/L	<1.1	4.0	1.1	01/11/18 13:48	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	01/11/18 13:48	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Dibromomethane	ug/L	<0.50	1.0	0.50	01/11/18 13:48	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	01/11/18 13:48	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	01/11/18 13:48	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	01/11/18 13:48	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Ethylbenzene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	01/11/18 13:48	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
m&p-Xylene	ug/L	<0.24	1.0	0.24	01/11/18 13:48	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
Methylene Chloride	ug/L	<1.2	4.0	1.2	01/11/18 13:48	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Naphthalene	ug/L	<0.42	1.0	0.42	01/11/18 13:48	
o-Xylene	ug/L	<0.11	0.50	0.11	01/11/18 13:48	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
Styrene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	01/11/18 13:48	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	01/11/18 13:48	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	01/11/18 13:48	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	01/11/18 13:48	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	01/11/18 13:48	
Toluene	ug/L	<0.17	0.50	0.17	01/11/18 13:48	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	01/11/18 13:48	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	01/11/18 13:48	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	01/11/18 13:48	
Trichloroethene	ug/L	<0.18	0.40	0.18	01/11/18 13:48	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	01/11/18 13:48	
Vinyl acetate	ug/L	<1.5	10.0	1.5	01/11/18 13:48	
Vinyl chloride	ug/L	<0.096	0.20	0.096	01/11/18 13:48	
Xylene (Total)	ug/L	<0.24	1.5	0.24	01/11/18 13:48	
1,2-Dichloroethane-d4 (S)	%.	100	75-137		01/11/18 13:48	
4-Bromofluorobenzene (S)	%.	99	75-125		01/11/18 13:48	
Toluene-d8 (S)	%.	99	75-125		01/11/18 13:48	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

LABORATORY CONTROL SAMPLE & LCSD: 2812336 2812337

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	20.8	103	104	75-136	1	30	
1,1,1-Trichloroethane	ug/L	20	21.1	20.7	106	103	75-129	2	30	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	18.5	97	92	71-138	4	30	
1,1,2-Trichloroethane	ug/L	20	20.9	21.7	104	109	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.0	19.7	100	99	69-126	1	30	
1,1-Dichloroethane	ug/L	20	20.4	20.6	102	103	75-125	1	30	
1,1-Dichloroethene	ug/L	20	21.1	20.4	106	102	75-125	4	30	
1,1-Dichloropropene	ug/L	20	20.4	19.6	102	98	75-125	4	30	
1,2,3-Trichlorobenzene	ug/L	20	18.2	20.9	91	105	75-125	14	30	
1,2,3-Trichloropropane	ug/L	20	20.7	19.7	104	99	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	18.6	95	93	75-125	1	30	
1,2,4-Trimethylbenzene	ug/L	20	18.4	18.2	92	91	75-125	1	30	
1,2-Dibromo-3-chloropropane	ug/L	50	44.7	45.5	89	91	71-130	2	30	
1,2-Dibromoethane (EDB)	ug/L	20	19.8	19.8	99	99	75-125	0	30	
1,2-Dichlorobenzene	ug/L	20	20.1	20.5	100	103	75-125	2	30	
1,2-Dichloroethane	ug/L	20	20.5	19.6	102	98	70-125	4	30	
1,2-Dichloroethene (Total)	ug/L	40	41.1	40.3	103	101	75-125	2	30	
1,2-Dichloropropane	ug/L	20	19.3	19.6	96	98	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	20	19.2	18.3	96	91	75-125	5	30	
1,3-Dichlorobenzene	ug/L	20	19.6	19.4	98	97	75-125	1	30	
1,3-Dichloropropane	ug/L	20	20.6	21.0	103	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	20	19.4	19.3	97	96	75-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	402	494	101	124	64-140	21	30	
2,2,4-Trimethylpentane	ug/L	20	21.2	19.8	106	99	68-125	7	30	
2,2-Dichloropropane	ug/L	20	21.7	21.3	108	107	70-131	2	30	
2-Butanone (MEK)	ug/L	100	108	106	108	106	69-125	2	30	
2-Chlorotoluene	ug/L	20	19.2	19.0	96	95	75-125	1	30	
2-Hexanone	ug/L	100	94.7	94.9	95	95	73-129	0	30	
4-Chlorotoluene	ug/L	20	21.2	20.5	106	103	75-125	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	105	105	73-125	0	30	
Acetone	ug/L	100	96.0	99.7	96	100	66-126	4	30	
Acrolein	ug/L	200	219	215	109	108	56-150	2	30	
Acrylonitrile	ug/L	200	210	205	105	103	68-129	3	30	
Benzene	ug/L	20	20.9	20.8	104	104	75-125	1	30	
Bromobenzene	ug/L	20	20.4	19.2	102	96	75-125	6	30	
Bromochloromethane	ug/L	20	20.7	20.8	103	104	75-126	0	30	
Bromodichloromethane	ug/L	20	19.3	18.7	97	94	75-133	3	30	
Bromoform	ug/L	20	20.5	21.2	102	106	62-142	3	30	
Bromomethane	ug/L	20	39.1	41.8	195	209	34-143	7	30	CH,L3
Carbon disulfide	ug/L	20	21.6	21.0	108	105	71-125	3	30	
Carbon tetrachloride	ug/L	20	20.6	20.6	103	103	71-145	0	30	
Chlorobenzene	ug/L	20	19.8	19.5	99	97	75-125	2	30	
Chloroethane	ug/L	20	18.2	18.7	91	94	75-125	3	30	
Chloroform	ug/L	20	21.1	20.5	106	102	75-125	3	30	
Chloromethane	ug/L	20	33.1	31.2	165	156	54-125	6	30	CH,L3
cis-1,2-Dichloroethene	ug/L	20	20.8	20.5	104	102	75-125	2	30	
cis-1,3-Dichloropropene	ug/L	20	21.9	22.1	110	110	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

LABORATORY CONTROL SAMPLE & LCSD: 2812336 2812337

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	19.7	19.8	99	99	74-141	0	30	
Dibromomethane	ug/L	20	19.8	19.0	99	95	75-125	4	30	
Dichlorodifluoromethane	ug/L	20	19.6	19.3	98	96	59-130	2	30	
Dichlorofluoromethane	ug/L	20	20.1	19.6	101	98	75-125	3	30	
Diisopropyl ether	ug/L	20	22.2	22.0	111	110	69-125	1	30	
Ethyl-tert-butyl ether	ug/L	20	21.4	21.2	107	106	73-125	1	30	
Ethylbenzene	ug/L	20	20.2	20.1	101	100	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	20	20.4	19.9	102	99	75-131	2	30	
Isopropylbenzene (Cumene)	ug/L	20	18.5	18.7	92	94	75-125	1	30	
m&p-Xylene	ug/L	40	39.8	39.4	99	98	75-125	1	30	
Methyl-tert-butyl ether	ug/L	20	20.7	20.7	103	104	75-125	0	30	
Methylene Chloride	ug/L	20	20.4	20.6	102	103	73-125	1	30	
n-Butylbenzene	ug/L	20	18.0	18.1	90	90	75-125	0	30	
n-Propylbenzene	ug/L	20	19.1	18.7	95	94	75-125	2	30	
Naphthalene	ug/L	20	14.8	17.0	74	85	74-125	14	30	
o-Xylene	ug/L	20	17.9	18.1	89	91	75-125	2	30	
p-Isopropyltoluene	ug/L	20	19.8	19.1	99	96	75-125	3	30	
sec-Butylbenzene	ug/L	20	19.2	18.9	96	95	75-125	1	30	
Styrene	ug/L	20	21.2	20.4	106	102	75-125	4	30	
tert-Amylmethyl ether	ug/L	20	20.7	21.4	104	107	71-126	3	30	
tert-Butyl Alcohol	ug/L	200	230	267	115	134	69-131	15	30	L3
tert-Butylbenzene	ug/L	20	18.9	18.5	95	93	75-125	2	30	
Tetrachloroethene	ug/L	20	20.5	20.0	102	100	75-125	2	30	
Tetrahydrofuran	ug/L	200	191	199	96	100	65-127	4	30	
Toluene	ug/L	20	19.8	19.7	99	98	75-125	1	30	
trans-1,2-Dichloroethene	ug/L	20	20.3	19.8	102	99	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	20	19.1	19.3	96	96	75-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	50	50.0	47.0	100	94	30-150	6	30	
Trichloroethene	ug/L	20	20.9	21.2	105	106	75-125	2	30	
Trichlorofluoromethane	ug/L	20	20.0	19.9	100	99	71-140	1	30	
Vinyl acetate	ug/L	20	20.1	19.8	100	99	68-137	2	30	
Vinyl chloride	ug/L	20	20.8	20.4	104	102	70-125	2	30	
Xylene (Total)	ug/L	60	57.6	57.5	96	96	75-125	0	30	
1,2-Dichloroethane-d4 (S)	%.				102	99	75-137			
4-Bromofluorobenzene (S)	%.				100	98	75-125			
Toluene-d8 (S)	%.				98	98	75-125			

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.0	105	75-137	
1,1,1-Trichloroethane	ug/L	<0.15	20	22.2	111	75-139	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20.3	102	60-142	
1,1,2-Trichloroethane	ug/L	<0.22	20	22.1	111	75-128	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	23.6	118	62-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	21.3	107	70-129	
1,1-Dichloroethene	ug/L	<0.18	20	21.8	109	67-141	
1,1-Dichloropropene	ug/L	<0.18	20	20.6	103	64-144	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	22.5	112	66-139	
1,2,3-Trichloropropane	ug/L	<0.66	20	20.9	105	69-134	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	21.1	106	65-138	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	19.6	98	65-143	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	46.7	93	61-134	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	19.7	99	74-129	
1,2-Dichlorobenzene	ug/L	<0.21	20	21.8	109	68-135	
1,2-Dichloroethane	ug/L	<0.15	20	20.2	101	73-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40.4	101	69-134	
1,2-Dichloropropane	ug/L	<0.62	20	20.9	104	64-130	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20.2	101	64-146	
1,3-Dichlorobenzene	ug/L	<0.16	20	20.8	104	69-135	
1,3-Dichloropropane	ug/L	<0.13	20	21.3	106	67-128	
1,4-Dichlorobenzene	ug/L	<0.10	20	20.9	104	66-134	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	394	98	58-140	
2,2,4-Trimethylpentane	ug/L	<1.3	20	25.0	125	48-150	
2,2-Dichloropropane	ug/L	<0.40	20	23.3	116	50-150	
2-Butanone (MEK)	ug/L	<2.4	100	105	105	58-125	
2-Chlorotoluene	ug/L	<0.20	20	20.6	103	65-138	
2-Hexanone	ug/L	<2.5	100	96.7	97	61-134	
4-Chlorotoluene	ug/L	<0.13	20	22.1	111	68-135	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	105	105	61-130	
Acetone	ug/L	<8.8	100	167	167	51-140	M1
Acrolein	ug/L	<4.8	200	230	115	48-150	
Acrylonitrile	ug/L	<4.9	200	210	105	55-134	
Benzene	ug/L	<0.13	20	21.1	106	63-132	
Bromobenzene	ug/L	<0.16	20	21.2	106	67-138	
Bromochloromethane	ug/L	<0.38	20	20.9	105	66-138	
Bromodichloromethane	ug/L	<0.20	20	20.5	102	75-137	
Bromoform	ug/L	<1.0	20	21.8	109	65-129	
Bromomethane	ug/L	<1.5	20	45.2	226	41-150	CH,M0
Carbon disulfide	ug/L	<0.37	20	18.5	92	72-132	
Carbon tetrachloride	ug/L	<0.20	20	21.8	109	75-150	
Chlorobenzene	ug/L	<0.14	20	20.5	102	73-127	
Chloroethane	ug/L	<0.44	20	20.1	100	74-138	
Chloroform	ug/L	<0.46	20	21.4	107	74-125	
Chloromethane	ug/L	<1.1	20	32.9	164	58-129	CH,M0
cis-1,2-Dichloroethene	ug/L	<0.20	20	20.4	102	63-135	
cis-1,3-Dichloropropene	ug/L	<0.12	20	22.0	110	66-129	
Dibromochloromethane	ug/L	<0.13	20	20.3	101	75-133	
Dibromomethane	ug/L	<0.50	20	20.8	104	68-134	
Dichlorodifluoromethane	ug/L	<0.31	20	23.9	120	72-150	
Dichlorofluoromethane	ug/L	<0.38	20	20.5	102	75-129	
Diisopropyl ether	ug/L	<0.12	20	22.3	111	62-128	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

MATRIX SPIKE SAMPLE: 2812338

Parameter	Units	10416721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	22.1	111	63-132	
Ethylbenzene	ug/L	<0.14	20	20.8	104	72-130	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	24.3	122	71-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	19.4	97	70-136	
m&p-Xylene	ug/L	<0.24	40	41.0	102	64-142	
Methyl-tert-butyl ether	ug/L	<0.14	20	21.2	106	72-125	
Methylene Chloride	ug/L	<1.2	20	20.3	102	60-132	
n-Butylbenzene	ug/L	<0.13	20	20.6	103	60-150	
n-Propylbenzene	ug/L	<0.12	20	20.0	100	63-142	
Naphthalene	ug/L	<0.42	20	17.5	88	67-125	
o-Xylene	ug/L	<0.11	20	18.1	91	60-143	
p-Isopropyltoluene	ug/L	<0.14	20	21.7	108	64-146	
sec-Butylbenzene	ug/L	<0.12	20	21.6	108	67-144	
Styrene	ug/L	<0.14	20	21.5	108	67-136	
tert-Amylmethyl ether	ug/L	<0.12	20	21.7	109	60-134	
tert-Butyl Alcohol	ug/L	<2.2	200	262	131	56-146	
tert-Butylbenzene	ug/L	<0.15	20	20.2	101	68-135	
Tetrachloroethene	ug/L	<0.16	20	20.9	105	67-148	
Tetrahydrofuran	ug/L	<4.3	200	325	162	51-141	M1
Toluene	ug/L	<0.17	20	20.0	100	61-140	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20.0	100	62-138	
trans-1,3-Dichloropropene	ug/L	<0.14	20	19.8	99	67-134	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	53.3	107	30-150	
Trichloroethene	ug/L	<0.18	20	21.6	108	64-149	
Trichlorofluoromethane	ug/L	<0.13	20	23.2	116	75-150	
Vinyl acetate	ug/L	<1.5	20	20.7	103	49-143	
Vinyl chloride	ug/L	<0.096	20	22.9	114	75-133	
Xylene (Total)	ug/L	<0.24	60	59.1	98	63-142	
1,2-Dichloroethane-d4 (S)	%.				98	75-137	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				97	75-125	

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	0.89	0.85	4	30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

SAMPLE DUPLICATE: 2812349

Parameter	Units	10416722001 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	101	102	2		
4-Bromofluorobenzene (S)	%.	98	100	1		
Toluene-d8 (S)	%.	96	101	5		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10416722

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 517654

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10416722

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10416722001	**Lashaw-GW-010918**	EPA 8260B	517654		
10416722002	**Trip Blank**	EPA 8260B	517654		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

~~10416711~~ 1/10/18
10416722

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497-39-Rev1	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447***

Regulatory Agency

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2		
1	Lashaw-GW-010918	WT	G	1/9	845	—	—	—	3				X				X											001
2	Trip Blank	↓	↓	↓	—	—	—	—	2				X				X											1 set per cooler
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	1/9/18	1600	[signature] / PACE	1/10/18	1000	1.5	Y	Y	Y
*Field filtered by client										

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 1/9/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10416722

10416722

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9636 4393

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.3 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 1/10/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☒ No		8. no MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. only 2 trip blanks logged in on WO 10416721
Trip Blank Custody Seals Present?	☐ Yes	☒ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1100	Temp: 1.3	Corrected Temp: 1.5
Time: 1120	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/10/18

Note: Whenever there is a discrepancy affecting North Carolina complian m will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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January 24, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Julie Lidstone, GHD
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10417529

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10417529001	**MW9U-GW-011518**	Water	01/15/18 10:50	01/18/18 11:40
10417529002	**MW3D-GW-011518**	Water	01/15/18 12:40	01/18/18 11:40
10417529003	**MW1S-GW-011518**	Water	01/15/18 13:00	01/18/18 11:40
10417529004	**MW2D-GW-011518**	Water	01/15/18 14:15	01/18/18 11:40
10417529005	**MW6U-GW-011518**	Water	01/15/18 15:40	01/18/18 11:40
10417529006	**MarlowNo2-GW-011618**	Water	01/16/18 09:30	01/18/18 11:40
10417529007	**W26-GW-011618**	Water	01/16/18 08:30	01/18/18 11:40
10417529008	**Trip Blank**	Water	01/15/18 00:00	01/18/18 11:40

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10417529001	**MW9U-GW-011518**	EPA 8260B	AEZ, DJB	83	PASI-M
10417529002	**MW3D-GW-011518**	EPA 8260B	DJB	83	PASI-M
10417529003	**MW1S-GW-011518**	EPA 8260B	DJB	83	PASI-M
10417529004	**MW2D-GW-011518**	EPA 8260B	DJB	83	PASI-M
10417529005	**MW6U-GW-011518**	EPA 8260B	DJB	83	PASI-M
10417529006	**MarlowNo2-GW-011618**	EPA 8260B	DJB	83	PASI-M
10417529007	**W26-GW-011618**	EPA 8260B	DJB	83	PASI-M
10417529008	**Trip Blank**	EPA 8260B	DJB	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417529001	**MW9U-GW-011518**					
EPA 8260B	Carbon disulfide	0.76J	ug/L	1.0	01/20/18 03:34	
EPA 8260B	Carbon tetrachloride	298	ug/L	2.5	01/22/18 14:41	
EPA 8260B	Chloroform	8.7	ug/L	1.0	01/20/18 03:34	
10417529004	**MW2D-GW-011518**					
EPA 8260B	Benzene	0.13J	ug/L	0.50	01/20/18 04:45	
EPA 8260B	Carbon disulfide	0.78J	ug/L	1.0	01/20/18 04:45	
EPA 8260B	Toluene	0.22J	ug/L	0.50	01/20/18 04:45	
10417529005	**MW6U-GW-011518**					
EPA 8260B	Carbon tetrachloride	62.3	ug/L	0.50	01/20/18 05:09	
EPA 8260B	Chloroform	2.6	ug/L	1.0	01/20/18 05:09	
10417529006	**MarlowNo2-GW-011618**					
EPA 8260B	Carbon tetrachloride	8.6	ug/L	0.50	01/20/18 05:33	
EPA 8260B	Chloroform	3.9	ug/L	1.0	01/20/18 05:33	
10417529007	**W26-GW-011618**					
EPA 8260B	Carbon tetrachloride	24.2	ug/L	0.50	01/20/18 05:57	
EPA 8260B	Chloroform	1.7	ug/L	1.0	01/20/18 05:57	
10417529008	**Trip Blank**					
EPA 8260B	Chloroform	0.55J	ug/L	1.0	01/20/18 01:11	

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 24, 2018

General Information:
8 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 518817

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 2817993)
  - Bromomethane
- LCS (Lab ID: 2817994)
  - Bromomethane
- MS (Lab ID: 2817995)
  - Bromomethane
- MSD (Lab ID: 2817996)
  - Bromomethane
- MW1S-GW-011518 (Lab ID: 10417529003)
  - Bromomethane
- MW2D-GW-011518 (Lab ID: 10417529004)
  - Bromomethane
- MW3D-GW-011518 (Lab ID: 10417529002)
  - Bromomethane
- MW6U-GW-011518 (Lab ID: 10417529005)
  - Bromomethane
- MW9U-GW-011518 (Lab ID: 10417529001)
  - Bromomethane
- MarlowNo2-GW-011618 (Lab ID: 10417529006)
  - Bromomethane
- Trip Blank (Lab ID: 10417529008)
  - Bromomethane
- W26-GW-011618 (Lab ID: 10417529007)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 24, 2018

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 518817

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2817994)
  - Acetone

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW9U-GW-011518 **Lab ID: 10417529001** Collected: 01/15/18 10:50 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:34	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 03:34	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 03:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 03:34	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:34	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:34	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 03:34	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:34	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 03:34	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 03:34	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 03:34	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 03:34	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:34	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 03:34	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 03:34	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:34	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:34	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 03:34	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 03:34	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 03:34	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 03:34	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 03:34	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:34	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 03:34	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 03:34	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 03:34	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 03:34	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 03:34	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:34	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 03:34	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:34	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 03:34	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 03:34	74-83-9	CL
Carbon disulfide	**0.76J**	ug/L	1.0	0.37	1		01/20/18 03:34	75-15-0	
Carbon tetrachloride	**298**	ug/L	2.5	1.0	5		01/22/18 14:41	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 03:34	75-00-3	
Chloroform	**8.7**	ug/L	1.0	0.46	1		01/20/18 03:34	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 03:34	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW9U-GW-011518 **Lab ID: 10417529001** Collected: 01/15/18 10:50 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 03:34	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 03:34	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 03:34	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 03:34	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 03:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 03:34	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 03:34	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:34	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 03:34	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 03:34	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 03:34	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 03:34	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 03:34	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 03:34	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:34	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:34	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 03:34	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:34	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:34	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 03:34	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:34	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:34	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 03:34	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:34	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 03:34	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:34	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 03:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-137		1		01/20/18 03:34	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/20/18 03:34	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		01/20/18 03:34	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW3D-GW-011518 **Lab ID: 10417529002** Collected: 01/15/18 12:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 03:58	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 03:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 03:58	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:58	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 03:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 03:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 03:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 03:58	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 03:58	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 03:58	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 03:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 03:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:58	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 03:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 03:58	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 03:58	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 03:58	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 03:58	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:58	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 03:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 03:58	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 03:58	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 03:58	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 03:58	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:58	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 03:58	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:58	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 03:58	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 03:58	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 03:58	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:58	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 03:58	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/20/18 03:58	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 03:58	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW3D-GW-011518 **Lab ID: 10417529002** Collected: 01/15/18 12:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 03:58	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 03:58	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 03:58	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 03:58	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 03:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 03:58	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 03:58	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 03:58	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 03:58	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 03:58	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 03:58	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 03:58	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 03:58	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 03:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 03:58	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:58	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 03:58	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 03:58	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:58	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 03:58	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:58	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 03:58	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 03:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 03:58	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 03:58	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 03:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 03:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-137		1		01/20/18 03:58	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/20/18 03:58	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		01/20/18 03:58	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW1S-GW-011518 **Lab ID: 10417529003** Collected: 01/15/18 13:00 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 04:22	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 04:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 04:22	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:22	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:22	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 04:22	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 04:22	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 04:22	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 04:22	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 04:22	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:22	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 04:22	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 04:22	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:22	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:22	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 04:22	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 04:22	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 04:22	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 04:22	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 04:22	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:22	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 04:22	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 04:22	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 04:22	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 04:22	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 04:22	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:22	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 04:22	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:22	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 04:22	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 04:22	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 04:22	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:22	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 04:22	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/20/18 04:22	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 04:22	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW1S-GW-011518 **Lab ID: 10417529003** Collected: 01/15/18 13:00 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 04:22	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 04:22	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 04:22	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 04:22	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 04:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 04:22	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 04:22	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:22	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 04:22	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 04:22	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 04:22	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 04:22	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 04:22	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 04:22	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:22	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:22	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 04:22	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:22	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:22	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 04:22	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:22	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:22	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 04:22	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:22	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 04:22	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:22	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 04:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-137		1		01/20/18 04:22	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		01/20/18 04:22	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		01/20/18 04:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW2D-GW-011518 **Lab ID: 10417529004** Collected: 01/15/18 14:15 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:45	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 04:45	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 04:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 04:45	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:45	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:45	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 04:45	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:45	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 04:45	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 04:45	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 04:45	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 04:45	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:45	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 04:45	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 04:45	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 04:45	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:45	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 04:45	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 04:45	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 04:45	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 04:45	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 04:45	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:45	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 04:45	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 04:45	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 04:45	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 04:45	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 04:45	107-13-1	
Benzene	**0.13J**	ug/L	0.50	0.13	1		01/20/18 04:45	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:45	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 04:45	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:45	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 04:45	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 04:45	74-83-9	CL
Carbon disulfide	**0.78J**	ug/L	1.0	0.37	1		01/20/18 04:45	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:45	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 04:45	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/20/18 04:45	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 04:45	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW2D-GW-011518 **Lab ID: 10417529004** Collected: 01/15/18 14:15 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 04:45	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 04:45	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 04:45	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 04:45	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 04:45	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 04:45	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 04:45	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 04:45	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 04:45	109-99-9	
Toluene	**0.22J**	ug/L	0.50	0.17	1		01/20/18 04:45	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 04:45	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 04:45	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 04:45	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 04:45	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 04:45	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:45	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 04:45	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 04:45	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:45	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 04:45	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:45	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 04:45	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 04:45	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 04:45	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 04:45	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 04:45	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 04:45	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-137		1		01/20/18 04:45	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		01/20/18 04:45	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		01/20/18 04:45	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW6U-GW-011518 **Lab ID: 10417529005** Collected: 01/15/18 15:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 05:09	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 05:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 05:09	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:09	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:09	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 05:09	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 05:09	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:09	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:09	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:09	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:09	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 05:09	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 05:09	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:09	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:09	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 05:09	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 05:09	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 05:09	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 05:09	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 05:09	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:09	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 05:09	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 05:09	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 05:09	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 05:09	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 05:09	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:09	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:09	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:09	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:09	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 05:09	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 05:09	75-15-0	
Carbon tetrachloride	**62.3**	ug/L	0.50	0.20	1		01/20/18 05:09	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 05:09	75-00-3	
Chloroform	**2.6**	ug/L	1.0	0.46	1		01/20/18 05:09	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 05:09	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MW6U-GW-011518 **Lab ID: 10417529005** Collected: 01/15/18 15:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 05:09	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 05:09	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:09	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 05:09	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 05:09	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 05:09	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 05:09	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:09	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 05:09	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:09	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 05:09	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 05:09	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 05:09	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 05:09	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:09	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:09	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 05:09	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:09	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:09	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 05:09	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:09	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:09	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 05:09	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:09	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:09	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:09	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 05:09	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-137		1		01/20/18 05:09	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		01/20/18 05:09	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		01/20/18 05:09	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MarlowNo2-GW-011618 **Lab ID: 10417529006** Collected: 01/16/18 09:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:33	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 05:33	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 05:33	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 05:33	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:33	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:33	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 05:33	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:33	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 05:33	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:33	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:33	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:33	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:33	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 05:33	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 05:33	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:33	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:33	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 05:33	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 05:33	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 05:33	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 05:33	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 05:33	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:33	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 05:33	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 05:33	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 05:33	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 05:33	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 05:33	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:33	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:33	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:33	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:33	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 05:33	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 05:33	75-15-0	
Carbon tetrachloride	**8.6**	ug/L	0.50	0.20	1		01/20/18 05:33	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 05:33	75-00-3	
Chloroform	**3.9**	ug/L	1.0	0.46	1		01/20/18 05:33	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 05:33	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: MarlowNo2-GW-011618 **Lab ID: 10417529006** Collected: 01/16/18 09:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 05:33	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 05:33	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:33	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 05:33	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 05:33	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 05:33	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 05:33	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:33	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 05:33	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:33	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 05:33	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 05:33	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 05:33	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 05:33	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:33	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:33	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 05:33	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:33	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:33	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 05:33	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:33	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:33	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 05:33	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:33	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:33	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:33	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 05:33	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-137		1		01/20/18 05:33	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		01/20/18 05:33	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		01/20/18 05:33	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: W26-GW-011618 **Lab ID: 10417529007** Collected: 01/16/18 08:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:57	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 05:57	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 05:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 05:57	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:57	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:57	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 05:57	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:57	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 05:57	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:57	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:57	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:57	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:57	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 05:57	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 05:57	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 05:57	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:57	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 05:57	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 05:57	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 05:57	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 05:57	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 05:57	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:57	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 05:57	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 05:57	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 05:57	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 05:57	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 05:57	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:57	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:57	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:57	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 05:57	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 05:57	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 05:57	75-15-0	
Carbon tetrachloride	**24.2**	ug/L	0.50	0.20	1		01/20/18 05:57	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 05:57	75-00-3	
Chloroform	**1.7**	ug/L	1.0	0.46	1		01/20/18 05:57	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 05:57	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: W26-GW-011618 **Lab ID: 10417529007** Collected: 01/16/18 08:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 05:57	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 05:57	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 05:57	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 05:57	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 05:57	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 05:57	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 05:57	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 05:57	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 05:57	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 05:57	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 05:57	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 05:57	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 05:57	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 05:57	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 05:57	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:57	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 05:57	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 05:57	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:57	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 05:57	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:57	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 05:57	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 05:57	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 05:57	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 05:57	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 05:57	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 05:57	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-137		1		01/20/18 05:57	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		01/20/18 05:57	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		01/20/18 05:57	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: Trip Blank **Lab ID: 10417529008** Collected: 01/15/18 00:00 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 01:11	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/20/18 01:11	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/20/18 01:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/20/18 01:11	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 01:11	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 01:11	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/20/18 01:11	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 01:11	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/20/18 01:11	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/20/18 01:11	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/20/18 01:11	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 01:11	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/20/18 01:11	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/20/18 01:11	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/20/18 01:11	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/20/18 01:11	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 01:11	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/20/18 01:11	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/20/18 01:11	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/20/18 01:11	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/20/18 01:11	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/20/18 01:11	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 01:11	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/20/18 01:11	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/20/18 01:11	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/20/18 01:11	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/20/18 01:11	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/20/18 01:11	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 01:11	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 01:11	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/20/18 01:11	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/20/18 01:11	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/20/18 01:11	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/20/18 01:11	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/20/18 01:11	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/20/18 01:11	75-00-3	
Chloroform	**0.55J**	ug/L	1.0	0.46	1		01/20/18 01:11	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/20/18 01:11	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Sample: Trip Blank | **Lab ID: 10417529008** | Collected: 01/15/18 00:00 | Received: 01/18/18 11:40 | Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/20/18 01:11	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/20/18 01:11	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/20/18 01:11	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/20/18 01:11	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/20/18 01:11	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/20/18 01:11	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/20/18 01:11	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/20/18 01:11	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/20/18 01:11	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/20/18 01:11	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/20/18 01:11	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/20/18 01:11	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/20/18 01:11	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/20/18 01:11	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/20/18 01:11	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 01:11	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/20/18 01:11	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/20/18 01:11	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 01:11	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/20/18 01:11	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/20/18 01:11	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/20/18 01:11	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/20/18 01:11	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/20/18 01:11	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/20/18 01:11	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/20/18 01:11	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/20/18 01:11	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-137		1		01/20/18 01:11	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		01/20/18 01:11	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		01/20/18 01:11	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

QC Batch: 518817 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10417529001, 10417529002, 10417529003, 10417529004, 10417529005, 10417529006, 10417529007, 10417529008

METHOD BLANK: 2817993 Matrix: Water
Associated Lab Samples: 10417529001, 10417529002, 10417529003, 10417529004, 10417529005, 10417529006, 10417529007, 10417529008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	01/20/18 00:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	01/20/18 00:23	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	01/20/18 00:23	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	01/20/18 00:23	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	01/20/18 00:23	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	01/20/18 00:23	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	01/20/18 00:23	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	01/20/18 00:23	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	01/20/18 00:23	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	01/20/18 00:23	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	01/20/18 00:23	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	01/20/18 00:23	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	01/20/18 00:23	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	01/20/18 00:23	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	01/20/18 00:23	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	01/20/18 00:23	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	01/20/18 00:23	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	01/20/18 00:23	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	01/20/18 00:23	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	01/20/18 00:23	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	01/20/18 00:23	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	01/20/18 00:23	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	01/20/18 00:23	
2-Hexanone	ug/L	<2.5	5.0	2.5	01/20/18 00:23	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	01/20/18 00:23	
Acetone	ug/L	<8.8	20.0	8.8	01/20/18 00:23	
Acrolein	ug/L	<4.8	10.0	4.8	01/20/18 00:23	
Acrylonitrile	ug/L	<4.9	10.0	4.9	01/20/18 00:23	
Benzene	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
Bromobenzene	ug/L	<0.16	0.50	0.16	01/20/18 00:23	
Bromochloromethane	ug/L	<0.38	1.0	0.38	01/20/18 00:23	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	01/20/18 00:23	
Bromoform	ug/L	<1.0	4.0	1.0	01/20/18 00:23	
Bromomethane	ug/L	<1.5	4.0	1.5	01/20/18 00:23	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	01/20/18 00:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

METHOD BLANK: 2817993 Matrix: Water

Associated Lab Samples: 10417529001, 10417529002, 10417529003, 10417529004, 10417529005, 10417529006, 10417529007, 10417529008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	01/20/18 00:23	
Chlorobenzene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
Chloroethane	ug/L	<0.44	1.0	0.44	01/20/18 00:23	
Chloroform	ug/L	<0.46	1.0	0.46	01/20/18 00:23	
Chloromethane	ug/L	<1.1	4.0	1.1	01/20/18 00:23	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	01/20/18 00:23	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	01/20/18 00:23	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
Dibromomethane	ug/L	<0.50	1.0	0.50	01/20/18 00:23	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	01/20/18 00:23	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	01/20/18 00:23	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	01/20/18 00:23	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
Ethylbenzene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	01/20/18 00:23	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
m&p-Xylene	ug/L	<0.24	1.0	0.24	01/20/18 00:23	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
Methylene Chloride	ug/L	<1.2	4.0	1.2	01/20/18 00:23	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	01/20/18 00:23	
Naphthalene	ug/L	<0.42	1.0	0.42	01/20/18 00:23	
o-Xylene	ug/L	<0.11	0.50	0.11	01/20/18 00:23	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	01/20/18 00:23	
Styrene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	01/20/18 00:23	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	01/20/18 00:23	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	01/20/18 00:23	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	01/20/18 00:23	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	01/20/18 00:23	
Toluene	ug/L	<0.17	0.50	0.17	01/20/18 00:23	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	01/20/18 00:23	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	01/20/18 00:23	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	01/20/18 00:23	
Trichloroethene	ug/L	<0.18	0.40	0.18	01/20/18 00:23	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	01/20/18 00:23	
Vinyl acetate	ug/L	<1.5	10.0	1.5	01/20/18 00:23	
Vinyl chloride	ug/L	<0.096	0.20	0.096	01/20/18 00:23	
Xylene (Total)	ug/L	<0.24	1.5	0.24	01/20/18 00:23	
1,2-Dichloroethane-d4 (S)	%.	109	75-137		01/20/18 00:23	
4-Bromofluorobenzene (S)	%.	98	75-125		01/20/18 00:23	
Toluene-d8 (S)	%.	99	75-125		01/20/18 00:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

LABORATORY CONTROL SAMPLE: 2817994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.9	100	75-136	
1,1,1-Trichloroethane	ug/L	20	21.2	106	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	22.3	112	71-138	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	23.3	116	69-126	
1,1-Dichloroethane	ug/L	20	22.1	111	75-125	
1,1-Dichloroethene	ug/L	20	22.2	111	75-125	
1,1-Dichloropropene	ug/L	20	21.5	108	75-125	
1,2,3-Trichlorobenzene	ug/L	20	20.9	104	75-125	
1,2,3-Trichloropropane	ug/L	20	22.1	111	75-125	
1,2,4-Trichlorobenzene	ug/L	20	21.2	106	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.2	104	71-130	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-125	
1,2-Dichlorobenzene	ug/L	20	21.5	108	75-125	
1,2-Dichloroethane	ug/L	20	21.6	108	70-125	
1,2-Dichloroethene (Total)	ug/L	40	42.9	107	75-125	
1,2-Dichloropropane	ug/L	20	20.9	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.5	103	75-125	
1,3-Dichlorobenzene	ug/L	20	20.7	104	75-125	
1,3-Dichloropropane	ug/L	20	21.1	105	75-125	
1,4-Dichlorobenzene	ug/L	20	20.8	104	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	418	104	64-140	
2,2,4-Trimethylpentane	ug/L	20	21.6	108	68-125	
2,2-Dichloropropane	ug/L	20	19.5	98	70-131	
2-Butanone (MEK)	ug/L	100	119	119	69-125	
2-Chlorotoluene	ug/L	20	19.5	97	75-125	
2-Hexanone	ug/L	100	106	106	73-129	
4-Chlorotoluene	ug/L	20	21.2	106	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	73-125	
Acetone	ug/L	100	136	136	66-126	L3
Acrolein	ug/L	200	194	97	56-150	
Acrylonitrile	ug/L	200	230	115	68-129	
Benzene	ug/L	20	21.2	106	75-125	
Bromobenzene	ug/L	20	20.6	103	75-125	
Bromochloromethane	ug/L	20	22.3	111	75-126	
Bromodichloromethane	ug/L	20	20.1	100	75-133	
Bromoform	ug/L	20	18.6	93	62-142	
Bromomethane	ug/L	20	8.9	45	34-143	CL
Carbon disulfide	ug/L	20	21.9	110	71-125	
Carbon tetrachloride	ug/L	20	20.5	103	71-145	
Chlorobenzene	ug/L	20	19.9	100	75-125	
Chloroethane	ug/L	20	23.4	117	75-125	
Chloroform	ug/L	20	22.1	110	75-125	
Chloromethane	ug/L	20	18.2	91	54-125	
cis-1,2-Dichloroethene	ug/L	20	21.6	108	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.2	96	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

LABORATORY CONTROL SAMPLE: 2817994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.5	97	74-141	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	21.7	109	59-130	
Dichlorofluoromethane	ug/L	20	22.2	111	75-125	
Diisopropyl ether	ug/L	20	24.1	120	69-125	
Ethyl-tert-butyl ether	ug/L	20	20.5	103	73-125	
Ethylbenzene	ug/L	20	20.1	101	75-125	
Hexachloro-1,3-butadiene	ug/L	20	22.1	110	75-131	
Isopropylbenzene (Cumene)	ug/L	20	20.5	103	75-125	
m&p-Xylene	ug/L	40	42.0	105	75-125	
Methyl-tert-butyl ether	ug/L	20	20.6	103	75-125	
Methylene Chloride	ug/L	20	22.4	112	73-125	
n-Butylbenzene	ug/L	20	21.9	110	75-125	
n-Propylbenzene	ug/L	20	21.3	107	75-125	
Naphthalene	ug/L	20	20.6	103	74-125	
o-Xylene	ug/L	20	19.8	99	75-125	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-125	
Styrene	ug/L	20	21.4	107	75-125	
tert-Amylmethyl ether	ug/L	20	19.6	98	71-126	
tert-Butyl Alcohol	ug/L	200	214	107	69-131	
tert-Butylbenzene	ug/L	20	20.3	102	75-125	
Tetrachloroethene	ug/L	20	20.7	104	75-125	
Tetrahydrofuran	ug/L	200	254	127	65-127	
Toluene	ug/L	20	20.6	103	75-125	
trans-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.7	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	50.1	100	30-150	
Trichloroethene	ug/L	20	19.9	99	75-125	
Trichlorofluoromethane	ug/L	20	23.5	117	71-140	
Vinyl acetate	ug/L	20	17.2	86	68-137	
Vinyl chloride	ug/L	20	22.6	113	70-125	
Xylene (Total)	ug/L	60	61.9	103	75-125	
1,2-Dichloroethane-d4 (S)	%.			109	75-137	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817995 2817996

Parameter	Units	10417546017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.2	20.5	96	103	75-137	7	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.5	22.2	107	111	75-139	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	22.1	23.3	110	116	60-142	5	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.9	21.0	99	105	75-128	5	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817995 2817996

Parameter	Units	10417546017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	25.3	25.5	126	128	62-150	1	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.9	22.4	110	112	70-129	2	30	
1,1-Dichloroethene	ug/L	ND	20	20	22.4	22.7	112	114	67-141	2	30	
1,1-Dichloropropene	ug/L	ND	20	20	21.7	22.3	108	112	64-144	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.6	21.6	103	108	66-139	5	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	21.5	22.8	107	114	69-134	6	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.8	21.5	104	107	65-138	3	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.1	20.6	100	103	65-143	3	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	47.7	53.1	95	106	61-134	11	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.3	20.6	101	103	74-129	1	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.3	21.1	101	105	68-135	4	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.5	21.0	102	105	73-125	3	30	
1,2-Dichloroethene (Total)	ug/L	2.3	40	40	45.2	45.7	107	109	69-134	1	30	
1,2-Dichloropropane	ug/L	ND	20	20	20.5	20.9	103	105	64-130	2	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	19.6	20.4	98	102	64-146	4	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.0	20.5	100	102	69-135	2	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.6	20.8	103	104	67-128	1	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	19.9	20.5	99	102	66-134	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	414	424	103	106	58-140	2	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	23.2	22.8	116	114	48-150	2	30	
2,2-Dichloropropane	ug/L	ND	20	20	19.1	19.6	96	98	50-150	2	30	
2-Butanone (MEK)	ug/L	ND	100	100	106	113	106	113	58-125	6	30	
2-Chlorotoluene	ug/L	ND	20	20	20.4	20.0	102	100	65-138	2	30	
2-Hexanone	ug/L	ND	100	100	102	108	101	108	61-134	7	30	
4-Chlorotoluene	ug/L	ND	20	20	20.1	20.9	101	105	68-135	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	106	113	106	113	61-130	6	30	
Acetone	ug/L	ND	100	100	127	125	127	125	51-140	1	30	
Acrolein	ug/L	ND	200	200	199	213	100	107	48-150	7	30	
Acrylonitrile	ug/L	ND	200	200	212	221	106	111	55-134	4	30	
Benzene	ug/L	ND	20	20	20.7	21.2	104	106	63-132	2	30	
Bromobenzene	ug/L	ND	20	20	20.3	20.6	102	103	67-138	1	30	
Bromochloromethane	ug/L	ND	20	20	21.8	22.4	109	112	66-138	3	30	
Bromodichloromethane	ug/L	ND	20	20	20.2	20.7	101	103	75-137	2	30	
Bromoform	ug/L	ND	20	20	18.3	18.8	91	94	65-129	3	30	
Bromomethane	ug/L	ND	20	20	11.8	14.0	59	70	41-150	17	30	CL
Carbon disulfide	ug/L	ND	20	20	22.4	22.7	112	113	72-132	1	30	
Carbon tetrachloride	ug/L	ND	20	20	21.3	21.8	106	109	75-150	3	30	
Chlorobenzene	ug/L	ND	20	20	19.9	20.4	99	102	73-127	2	30	
Chloroethane	ug/L	ND	20	20	26.0	25.5	130	127	74-138	2	30	
Chloroform	ug/L	ND	20	20	21.5	21.9	107	109	74-125	2	30	
Chloromethane	ug/L	ND	20	20	19.0	18.3	95	91	58-129	4	30	
cis-1,2-Dichloroethene	ug/L	1.8	20	20	23.2	23.3	107	107	63-135	0	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.5	18.8	93	94	66-129	1	30	
Dibromochloromethane	ug/L	ND	20	20	19.1	20.2	95	101	75-133	6	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817995 2817996

Parameter	Units	10417546017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	20	20	20.1	20.3	101	101	68-134	1	30	
Dichlorodifluoromethane	ug/L	ND	20	20	25.1	25.4	125	127	72-150	1	30	
Dichlorofluoromethane	ug/L	ND	20	20	22.9	22.8	114	114	75-129	0	30	
Diisopropyl ether	ug/L	ND	20	20	23.3	23.6	117	118	62-128	1	30	
Ethyl-tert-butyl ether	ug/L	ND	20	20	19.9	20.2	99	101	63-132	2	30	
Ethylbenzene	ug/L	ND	20	20	20.0	20.7	100	103	72-130	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	23.9	119	119	71-150	0	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	20.0	20.8	100	104	70-136	4	30	
m&p-Xylene	ug/L	ND	40	40	41.5	42.6	104	107	64-142	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.8	20.4	99	102	72-125	3	30	
Methylene Chloride	ug/L	ND	20	20	21.6	21.7	108	108	60-132	0	30	
n-Butylbenzene	ug/L	ND	20	20	20.8	21.5	104	107	60-150	3	30	
n-Propylbenzene	ug/L	ND	20	20	20.3	21.3	101	106	63-142	5	30	
Naphthalene	ug/L	ND	20	20	20.0	20.9	100	105	67-125	5	30	
o-Xylene	ug/L	ND	20	20	19.6	20.2	98	101	60-143	3	30	
p-Isopropyltoluene	ug/L	ND	20	20	19.8	21.0	99	105	64-146	6	30	
sec-Butylbenzene	ug/L	ND	20	20	20.7	21.1	104	106	67-144	2	30	
Styrene	ug/L	ND	20	20	19.9	20.7	99	103	67-136	4	30	
tert-Amylmethyl ether	ug/L	ND	20	20	18.8	19.5	94	98	60-134	4	30	
tert-Butyl Alcohol	ug/L	ND	200	200	202	207	101	103	56-146	2	30	
tert-Butylbenzene	ug/L	ND	20	20	19.5	20.5	97	103	68-135	5	30	
Tetrachloroethene	ug/L	28.7	20	20	48.8	50.5	100	109	67-148	3	30	
Tetrahydrofuran	ug/L	ND	200	200	240	251	120	126	51-141	4	30	
Toluene	ug/L	ND	20	20	19.9	21.1	100	105	61-140	6	30	
trans-1,2-Dichloroethene	ug/L	0.52	20	20	22.0	22.5	108	110	62-138	2	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	18.9	19.9	94	100	67-134	5	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	48.2	50.7	96	101	30-150	5	30	
Trichloroethene	ug/L	3.4	20	20	22.6	23.6	96	101	64-149	4	30	
Trichlorofluoromethane	ug/L	ND	20	20	26.5	26.5	133	133	75-150	0	30	
Vinyl acetate	ug/L	ND	20	20	20.8	21.9	104	109	49-143	5	30	
Vinyl chloride	ug/L	ND	20	20	24.6	24.4	123	122	75-133	1	30	
Xylene (Total)	ug/L	ND	60	60	61.1	62.8	102	105	63-142	3	30	
1,2-Dichloroethane-d4 (S)	%.						109	107	75-137			
4-Bromofluorobenzene (S)	%.						99	99	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417529

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417529001	**MW9U-GW-011518**	EPA 8260B	518817		
10417529002	**MW3D-GW-011518**	EPA 8260B	518817		
10417529003	**MW1S-GW-011518**	EPA 8260B	518817		
10417529004	**MW2D-GW-011518**	EPA 8260B	518817		
10417529005	**MW6U-GW-011518**	EPA 8260B	518817		
10417529006	**MarlowNo2-GW-011618**	EPA 8260B	518817		
10417529007	**W26-GW-011618**	EPA 8260B	518817		
10417529008	**Trip Blank**	EPA 8260B	518817		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10417529

Page : 1 of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	UPRR_Freeman
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Theriault
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	MW9U-GW-011518	WT	G	1/15	1050	—	—	—	3				X				X													001
2	MW3D-GW-011518	↓	↓	↓	1240	—	—	—	3				X				X													002
3	MW1S-GW-011518				1300	—	—	—	3				X				X													003
4	MW2D-GW-011518				1415	—	—	—	3				X				X													004
5	MW6U-GW-011518			↓	1540	—	—	—	3				X				X													005
6	MarlowNo2-GW-011618			1/16	930	—	—	—	3				X				X													006
7	W26-GW-011618			↓	830	—	—	—	3				X				X													007
8	Trip Blank	↓	↓	1/15	—	—	—	—	2				X				X													008
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	J. E. / CH2M	1/16/18	1600	Pace	1/18/18	1140	1.4 0.8	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: J. E. DATE Signed: 1/16/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#: 10417529

10417529

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9636 2015 / 7222 2740 3900

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other: PB **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.2, 0.6 **Cooler Temp Corrected (°C):** 1.4, 0.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 1/18/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. NO MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	~~☑ Yes~~ MD 1/18/18	☑ No		12. ~~trip blanks not sent~~ JMG 01/18/18 two TB vials received
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. ~~none sent~~ two TB vials received
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1205	Temp: 1.2, 0.6	Corrected Temp: 1.4, 0.8
Time: 1225	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/18/18

Note: Whenever there is a discrepancy affecting North Carolina complian . . . . . is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 29, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10417533

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10417533001	**MW9U-GW-011518**	Water	01/15/18 10:50	01/18/18 11:40
10417533002	**MW3D-GW-011518**	Water	01/15/18 12:40	01/18/18 11:40
10417533003	**MW1S-GW-011518**	Water	01/15/18 13:00	01/18/18 11:40
10417533004	**MW2D-GW-011518**	Water	01/15/18 14:15	01/18/18 11:40
10417533005	**MW6U-GW-011518**	Water	01/15/18 15:40	01/18/18 11:40
10417533006	**MarlowNo2-GW-011618**	Water	01/16/18 09:30	01/18/18 11:40
10417533007	**W26-GW-011618**	Water	01/16/18 08:30	01/18/18 11:40

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10417533001	**MW9U-GW-011518**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10417533002	**MW3D-GW-011518**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10417533003	**MW1S-GW-011518**	SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		EPA 300.0	KEO	3	PASI-M
10417533004	**MW2D-GW-011518**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10417533005	**MW6U-GW-011518**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10417533006	**MarlowNo2-GW-011618**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10417533007	**W26-GW-011618**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	JFP	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417533001	**MW9U-GW-011518**					
RSK 175	Methane	6.3J	ug/L	10.0	01/22/18 11:14	
6010C Met	Aluminum, Dissolved	121J	ug/L	200	01/23/18 14:01	
6010C Met	Antimony, Dissolved	3.6J	ug/L	20.0	01/23/18 14:01	
6010C Met	Barium, Dissolved	78.5	ug/L	10.0	01/23/18 14:01	
6010C Met	Calcium, Dissolved	63600	ug/L	500	01/23/18 14:01	
6010C Met	Chromium, Dissolved	0.67J	ug/L	10.0	01/23/18 14:01	
6010C Met	Copper, Dissolved	3.3J	ug/L	10.0	01/23/18 14:01	
6010C Met	Iron, Dissolved	352	ug/L	50.0	01/23/18 14:01	
6010C Met	Magnesium, Dissolved	13000	ug/L	500	01/23/18 14:01	
6010C Met	Manganese, Dissolved	8.3	ug/L	5.0	01/23/18 14:01	
6010C Met	Potassium, Dissolved	6800	ug/L	2500	01/23/18 14:01	
6010C Met	Sodium, Dissolved	161000	ug/L	1000	01/23/18 14:01	
6010C Met	Vanadium, Dissolved	3.4J	ug/L	15.0	01/23/18 14:01	
6010C Met	Zinc, Dissolved	9.1J	ug/L	20.0	01/23/18 14:01	
SM 2320B	Alkalinity, Total as CaCO3	100	mg/L	5.0	01/20/18 12:05	
SM 2540C	Total Dissolved Solids	733	mg/L	33.3	01/19/18 11:18	
EPA 300.0	Chloride	326	mg/L	12.0	01/18/18 22:59	M6
EPA 300.0	Nitrate as N	2.7	mg/L	0.10	01/18/18 17:34	H3,M1
EPA 300.0	Sulfate	19.1	mg/L	1.2	01/18/18 17:34	M1
EPA 353.2	Nitrogen, NO2 plus NO3	2.6	mg/L	0.10	01/20/18 15:15	M1
EPA 410.4	Chemical Oxygen Demand	44.2J	mg/L	50.0	01/24/18 14:44	
SM 5310C	Total Organic Carbon	2.2	mg/L	1.0	01/19/18 17:00	
10417533002	**MW3D-GW-011518**					
RSK 175	Methane	5.0J	ug/L	10.0	01/22/18 11:29	
6010C Met	Barium, Dissolved	44.4	ug/L	10.0	01/23/18 14:15	
6010C Met	Calcium, Dissolved	31500	ug/L	500	01/23/18 14:15	
6010C Met	Iron, Dissolved	23.4J	ug/L	50.0	01/23/18 14:15	
6010C Met	Magnesium, Dissolved	9570	ug/L	500	01/23/18 14:15	
6010C Met	Manganese, Dissolved	25.9	ug/L	5.0	01/23/18 14:15	
6010C Met	Potassium, Dissolved	1300J	ug/L	2500	01/23/18 14:15	
6010C Met	Sodium, Dissolved	13700	ug/L	1000	01/23/18 14:15	
6010C Met	Vanadium, Dissolved	1.7J	ug/L	15.0	01/23/18 14:15	
SM 2320B	Alkalinity, Total as CaCO3	140	mg/L	5.0	01/20/18 12:09	
SM 2540C	Total Dissolved Solids	189	mg/L	10.0	01/19/18 11:18	
EPA 300.0	Chloride	1.4	mg/L	1.2	01/18/18 18:37	B
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	01/18/18 18:37	H3
EPA 300.0	Sulfate	3.2	mg/L	1.2	01/18/18 18:37	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.15	mg/L	0.020	01/20/18 14:59	
EPA 410.4	Chemical Oxygen Demand	16.3J	mg/L	50.0	01/24/18 14:44	
SM 5310C	Total Organic Carbon	14.7	mg/L	1.0	01/25/18 17:29	
10417533003	**MW1S-GW-011518**					
SM 2320B	Alkalinity, Total as CaCO3	454	mg/L	5.0	01/20/18 12:12	
SM 2540C	Total Dissolved Solids	596	mg/L	20.0	01/19/18 11:18	
EPA 300.0	Chloride	7.6	mg/L	1.2	01/18/18 20:25	
EPA 300.0	Nitrate as N	0.053J	mg/L	0.10	01/18/18 20:25	H3
EPA 300.0	Sulfate	20.1	mg/L	1.2	01/18/18 20:25	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417533004	**MW2D-GW-011518**					
RSK 175	Ethene	4.6J	ug/L	10.0	01/22/18 11:36	
RSK 175	Methane	82.5	ug/L	10.0	01/22/18 11:36	
6010C Met	Aluminum, Dissolved	617	ug/L	200	01/23/18 14:18	
6010C Met	Barium, Dissolved	64.1	ug/L	10.0	01/23/18 14:18	
6010C Met	Calcium, Dissolved	27000	ug/L	500	01/23/18 14:18	
6010C Met	Chromium, Dissolved	0.71J	ug/L	10.0	01/23/18 14:18	
6010C Met	Copper, Dissolved	1.5J	ug/L	10.0	01/23/18 14:18	
6010C Met	Iron, Dissolved	1760	ug/L	50.0	01/23/18 14:18	
6010C Met	Magnesium, Dissolved	8330	ug/L	500	01/23/18 14:18	
6010C Met	Manganese, Dissolved	416	ug/L	5.0	01/23/18 14:18	
6010C Met	Potassium, Dissolved	5590	ug/L	2500	01/23/18 14:18	
6010C Met	Sodium, Dissolved	21700	ug/L	1000	01/23/18 14:18	
6010C Met	Vanadium, Dissolved	2.3J	ug/L	15.0	01/23/18 14:18	
6010C Met	Zinc, Dissolved	5.5J	ug/L	20.0	01/23/18 14:18	
SM 2320B	Alkalinity, Total as CaCO3	145	mg/L	5.0	01/20/18 12:16	
SM 2540C	Total Dissolved Solids	200	mg/L	10.0	01/19/18 11:18	
SM 4500-S-2 D	Sulfide, Total	0.0055J	mg/L	0.020	01/20/18 06:25	
EPA 300.0	Chloride	1.5	mg/L	1.2	01/18/18 20:40	B
EPA 300.0	Sulfate	5.7	mg/L	1.2	01/18/18 20:40	
EPA 353.2	Nitrogen, NO2 plus NO3	0.0079J	mg/L	0.020	01/20/18 15:03	B
EPA 410.4	Chemical Oxygen Demand	49.0J	mg/L	50.0	01/24/18 14:45	
SM 5310C	Total Organic Carbon	9.6	mg/L	1.0	01/19/18 17:39	
10417533005	**MW6U-GW-011518**					
RSK 175	Methane	5.3J	ug/L	10.0	01/22/18 11:43	
6010C Met	Aluminum, Dissolved	3190	ug/L	200	01/23/18 14:21	
6010C Met	Barium, Dissolved	75.2	ug/L	10.0	01/23/18 14:21	
6010C Met	Calcium, Dissolved	63800	ug/L	500	01/23/18 14:21	
6010C Met	Chromium, Dissolved	1.6J	ug/L	10.0	01/23/18 14:21	
6010C Met	Cobalt, Dissolved	1.7J	ug/L	10.0	01/23/18 14:21	
6010C Met	Copper, Dissolved	3.5J	ug/L	10.0	01/23/18 14:21	
6010C Met	Iron, Dissolved	4030	ug/L	50.0	01/23/18 14:21	
6010C Met	Magnesium, Dissolved	20200	ug/L	500	01/23/18 14:21	
6010C Met	Manganese, Dissolved	33.2	ug/L	5.0	01/23/18 14:21	
6010C Met	Potassium, Dissolved	2090J	ug/L	2500	01/23/18 14:21	
6010C Met	Sodium, Dissolved	16400	ug/L	1000	01/23/18 14:21	
6010C Met	Vanadium, Dissolved	15.8	ug/L	15.0	01/23/18 14:21	
6010C Met	Zinc, Dissolved	12.2J	ug/L	20.0	01/23/18 14:21	
EPA 7470A	Mercury, Dissolved	0.73	ug/L	0.20	01/28/18 18:49	
SM 2320B	Alkalinity, Total as CaCO3	251	mg/L	5.0	01/20/18 12:19	
SM 2540C	Total Dissolved Solids	363	mg/L	10.0	01/19/18 11:18	
SM 4500-S-2 D	Sulfide, Total	0.063	mg/L	0.020	01/20/18 06:26	
EPA 300.0	Chloride	5.9	mg/L	1.2	01/18/18 20:56	
EPA 300.0	Nitrate as N	1.8	mg/L	0.10	01/18/18 20:56	H3
EPA 300.0	Sulfate	7.8	mg/L	1.2	01/18/18 20:56	
EPA 353.2	Nitrogen, NO2 plus NO3	1.8	mg/L	0.020	01/20/18 15:04	FS
EPA 410.4	Chemical Oxygen Demand	33.1J	mg/L	50.0	01/24/18 14:45	
SM 5310C	Total Organic Carbon	0.98J	mg/L	1.0	01/19/18 17:53	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417533006	**MarlowNo2-GW-011618**					
RSK 175	Methane	153	ug/L	10.0	01/22/18 11:51	
6010C Met	Barium, Dissolved	20.2	ug/L	10.0	01/23/18 14:30	
6010C Met	Calcium, Dissolved	54200	ug/L	500	01/23/18 14:30	
6010C Met	Cobalt, Dissolved	1.9J	ug/L	10.0	01/23/18 14:30	
6010C Met	Iron, Dissolved	7560	ug/L	50.0	01/23/18 14:30	
6010C Met	Magnesium, Dissolved	16000	ug/L	500	01/23/18 14:30	
6010C Met	Manganese, Dissolved	355	ug/L	5.0	01/23/18 14:30	
6010C Met	Potassium, Dissolved	849J	ug/L	2500	01/23/18 14:30	
6010C Met	Sodium, Dissolved	17500	ug/L	1000	01/23/18 14:30	
6010C Met	Vanadium, Dissolved	0.54J	ug/L	15.0	01/23/18 14:30	
6010C Met	Zinc, Dissolved	16.4J	ug/L	20.0	01/23/18 14:30	
SM 2320B	Alkalinity, Total as CaCO3	223	mg/L	5.0	01/20/18 12:22	
SM 2540C	Total Dissolved Solids	253	mg/L	10.0	01/23/18 11:24	
EPA 300.0	Chloride	2.2	mg/L	1.2	01/18/18 21:11	B
EPA 300.0	Sulfate	2.6	mg/L	1.2	01/18/18 21:11	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.014J	mg/L	0.020	01/20/18 15:07	B
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	01/19/18 18:06	
10417533007	**W26-GW-011618**					
RSK 175	Methane	3.5J	ug/L	10.0	01/22/18 11:58	
6010C Met	Barium, Dissolved	6.2J	ug/L	10.0	01/23/18 14:33	
6010C Met	Calcium, Dissolved	36500	ug/L	500	01/23/18 14:33	
6010C Met	Magnesium, Dissolved	10900	ug/L	500	01/23/18 14:33	
6010C Met	Manganese, Dissolved	0.39J	ug/L	5.0	01/23/18 14:33	
6010C Met	Potassium, Dissolved	2180J	ug/L	2500	01/23/18 14:33	
6010C Met	Sodium, Dissolved	12900	ug/L	1000	01/23/18 14:33	
6010C Met	Vanadium, Dissolved	7.0J	ug/L	15.0	01/23/18 14:33	
6010C Met	Zinc, Dissolved	87.1	ug/L	20.0	01/23/18 14:33	
SM 2320B	Alkalinity, Total as CaCO3	144	mg/L	5.0	01/20/18 12:49	
SM 2540C	Total Dissolved Solids	226	mg/L	10.0	01/23/18 11:24	
EPA 300.0	Chloride	4.2	mg/L	1.2	01/18/18 21:26	
EPA 300.0	Nitrate as N	2.1	mg/L	0.10	01/18/18 21:26	H3
EPA 300.0	Sulfate	9.0	mg/L	1.2	01/18/18 21:26	
EPA 353.2	Nitrogen, NO2 plus NO3	1.9	mg/L	0.020	01/20/18 15:08	
SM 5310C	Total Organic Carbon	0.56J	mg/L	1.0	01/19/18 18:19	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10417533

Method: **6010C Met**
Description: 6010C MET ICP, Dissolved
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for 6010C Met. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10417533

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
7 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519002

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417284002,10417719004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2818984)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 2818985)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
7 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 99507

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417533001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 428822)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
7 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- MW1S-GW-011518 (Lab ID: 10417533003)
- MW2D-GW-011518 (Lab ID: 10417533004)
- MW3D-GW-011518 (Lab ID: 10417533002)
- MW6U-GW-011518 (Lab ID: 10417533005)
- MW9U-GW-011518 (Lab ID: 10417533001)
- MarlowNo2-GW-011618 (Lab ID: 10417533006)
- W26-GW-011618 (Lab ID: 10417533007)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 518710

B: Analyte was detected in the associated method blank.
- BLANK for HBN 518710 [WETA/340 (Lab ID: 2817282)
  - Chloride
  - Sulfate

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 518710

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417533001,10417533002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2817284)
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 2817285)
  - Nitrate as N
  - Sulfate

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- MS (Lab ID: 2817284)
  - Chloride
- MSD (Lab ID: 2817285)
  - Chloride

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M Hill
Date: January 29, 2018

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 519014

B: Analyte was detected in the associated method blank.
- BLANK for HBN 519014 [WETA/340 (Lab ID: 2819068)
  - Nitrogen, NO2 plus NO3

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519014

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417533001,10417533002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2819070)
  - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
6 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW9U-GW-011518 **Lab ID: 10417533001** Collected: 01/15/18 10:50 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:14	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 11:14	74-85-1	
Methane	**6.3J**	ug/L	10.0	1.1	1		01/22/18 11:14	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**121J**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:01	7429-90-5	
Antimony, Dissolved	**3.6J**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:01	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:01	7440-38-2	
Barium, Dissolved	**78.5**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:01	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:01	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:01	7440-43-9	
Calcium, Dissolved	**63600**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:01	7440-70-2	
Chromium, Dissolved	**0.67J**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:01	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:01	7440-48-4	
Copper, Dissolved	**3.3J**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:01	7440-50-8	
Iron, Dissolved	**352**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:01	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:01	7439-92-1	
Magnesium, Dissolved	**13000**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:01	7439-95-4	
Manganese, Dissolved	**8.3**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:01	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:01	7440-02-0	
Potassium, Dissolved	**6800**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:01	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:01	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:01	7440-22-4	
Sodium, Dissolved	**161000**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:01	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:01	7440-28-0	
Vanadium, Dissolved	**3.4J**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:01	7440-62-2	
Zinc, Dissolved	**9.1J**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:01	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:38	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**100**	mg/L	5.0	1.4	1		01/20/18 12:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**733**	mg/L	33.3	16.7	1		01/19/18 11:18		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		01/20/18 06:21	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**326**	mg/L	12.0	1.4	10		01/18/18 22:59	16887-00-6	M6
Nitrate as N	**2.7**	mg/L	0.10	0.0079	1		01/18/18 17:34	14797-55-8	H3,M1
Sulfate	**19.1**	mg/L	1.2	0.27	1		01/18/18 17:34	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW9U-GW-011518 **Lab ID: 10417533001** Collected: 01/15/18 10:50 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.6**	mg/L	0.10	0.037	5		01/20/18 15:15		M1
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**44.2J**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:44		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.20	1		01/19/18 17:00	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW3D-GW-011518 **Lab ID: 10417533002** Collected: 01/15/18 12:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:29	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 11:29	74-85-1	
Methane	**5.0J**	ug/L	10.0	1.1	1		01/22/18 11:29	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:15	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:15	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:15	7440-38-2	
Barium, Dissolved	**44.4**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:15	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:15	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:15	7440-43-9	
Calcium, Dissolved	**31500**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:15	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:15	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:15	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:15	7440-50-8	
Iron, Dissolved	**23.4J**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:15	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:15	7439-92-1	
Magnesium, Dissolved	**9570**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:15	7439-95-4	
Manganese, Dissolved	**25.9**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:15	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:15	7440-02-0	
Potassium, Dissolved	**1300J**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:15	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:15	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:15	7440-22-4	
Sodium, Dissolved	**13700**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:15	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:15	7440-28-0	
Vanadium, Dissolved	**1.7J**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:15	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:15	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:40	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**140**	mg/L	5.0	1.4	1		01/20/18 12:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**189**	mg/L	10.0	5.0	1		01/19/18 11:18		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		01/20/18 06:24	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		01/18/18 18:37	16887-00-6	B
Nitrate as N	**0.14**	mg/L	0.10	0.0079	1		01/18/18 18:37	14797-55-8	H3
Sulfate	**3.2**	mg/L	1.2	0.27	1		01/18/18 18:37	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW3D-GW-011518 **Lab ID: 10417533002** Collected: 01/15/18 12:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.020	0.0075	1		01/20/18 14:59		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**16.3J**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:44		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**14.7**	mg/L	1.0	0.20	1		01/25/18 17:29	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW1S-GW-011518 **Lab ID: 10417533003** Collected: 01/15/18 13:00 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**454**	mg/L	5.0	1.4	1		01/20/18 12:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**596**	mg/L	20.0	10.0	1		01/19/18 11:18		
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.6**	mg/L	1.2	0.14	1		01/18/18 20:25	16887-00-6	
Nitrate as N	**0.053J**	mg/L	0.10	0.0079	1		01/18/18 20:25	14797-55-8	H3
Sulfate	**20.1**	mg/L	1.2	0.27	1		01/18/18 20:25	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW2D-GW-011518 **Lab ID: 10417533004** Collected: 01/15/18 14:15 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:36	74-84-0	
Ethene	**4.6J**	ug/L	10.0	0.68	1		01/22/18 11:36	74-85-1	
Methane	**82.5**	ug/L	10.0	1.1	1		01/22/18 11:36	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**617**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:18	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:18	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:18	7440-38-2	
Barium, Dissolved	**64.1**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:18	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:18	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:18	7440-43-9	
Calcium, Dissolved	**27000**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:18	7440-70-2	
Chromium, Dissolved	**0.71J**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:18	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:18	7440-48-4	
Copper, Dissolved	**1.5J**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:18	7440-50-8	
Iron, Dissolved	**1760**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:18	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:18	7439-92-1	
Magnesium, Dissolved	**8330**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:18	7439-95-4	
Manganese, Dissolved	**416**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:18	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:18	7440-02-0	
Potassium, Dissolved	**5590**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:18	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:18	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:18	7440-22-4	
Sodium, Dissolved	**21700**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:18	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:18	7440-28-0	
Vanadium, Dissolved	**2.3J**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:18	7440-62-2	
Zinc, Dissolved	**5.5J**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:18	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:47	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**145**	mg/L	5.0	1.4	1		01/20/18 12:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**200**	mg/L	10.0	5.0	1		01/19/18 11:18		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.0055J**	mg/L	0.020	0.0050	1		01/20/18 06:25	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.14	1		01/18/18 20:40	16887-00-6	B
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		01/18/18 20:40	14797-55-8	H3
Sulfate	**5.7**	mg/L	1.2	0.27	1		01/18/18 20:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW2D-GW-011518 **Lab ID: 10417533004** Collected: 01/15/18 14:15 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.0079J**	mg/L	0.020	0.0075	1		01/20/18 15:03		B
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**49.0J**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:45		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**9.6**	mg/L	1.0	0.20	1		01/19/18 17:39	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW6U-GW-011518 **Lab ID: 10417533005** Collected: 01/15/18 15:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:43	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 11:43	74-85-1	
Methane	**5.3J**	ug/L	10.0	1.1	1		01/22/18 11:43	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**3190**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:21	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:21	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:21	7440-38-2	
Barium, Dissolved	**75.2**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:21	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:21	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:21	7440-43-9	
Calcium, Dissolved	**63800**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:21	7440-70-2	
Chromium, Dissolved	**1.6J**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:21	7440-47-3	
Cobalt, Dissolved	**1.7J**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:21	7440-48-4	
Copper, Dissolved	**3.5J**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:21	7440-50-8	
Iron, Dissolved	**4030**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:21	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:21	7439-92-1	
Magnesium, Dissolved	**20200**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:21	7439-95-4	
Manganese, Dissolved	**33.2**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:21	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:21	7440-02-0	
Potassium, Dissolved	**2090J**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:21	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:21	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:21	7440-22-4	
Sodium, Dissolved	**16400**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:21	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:21	7440-28-0	
Vanadium, Dissolved	**15.8**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:21	7440-62-2	
Zinc, Dissolved	**12.2J**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:21	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.73**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**251**	mg/L	5.0	1.4	1		01/20/18 12:19		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**363**	mg/L	10.0	5.0	1		01/19/18 11:18		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.063**	mg/L	0.020	0.0050	1		01/20/18 06:26	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.9**	mg/L	1.2	0.14	1		01/18/18 20:56	16887-00-6	
Nitrate as N	**1.8**	mg/L	0.10	0.0079	1		01/18/18 20:56	14797-55-8	H3
Sulfate	**7.8**	mg/L	1.2	0.27	1		01/18/18 20:56	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MW6U-GW-011518 **Lab ID: 10417533005** Collected: 01/15/18 15:40 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.8**	mg/L	0.020	0.0075	1		01/20/18 15:04		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**33.1J**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:45		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.98J**	mg/L	1.0	0.20	1		01/19/18 17:53	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MarlowNo2-GW-011618 **Lab ID: 10417533006** Collected: 01/16/18 09:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:51	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 11:51	74-85-1	
Methane	**153**	ug/L	10.0	1.1	1		01/22/18 11:51	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:30	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:30	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:30	7440-38-2	
Barium, Dissolved	**20.2**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:30	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:30	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:30	7440-43-9	
Calcium, Dissolved	**54200**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:30	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:30	7440-47-3	
Cobalt, Dissolved	**1.9J**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:30	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:30	7440-50-8	
Iron, Dissolved	**7560**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:30	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:30	7439-92-1	
Magnesium, Dissolved	**16000**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:30	7439-95-4	
Manganese, Dissolved	**355**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:30	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:30	7440-02-0	
Potassium, Dissolved	**849J**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:30	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:30	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:30	7440-22-4	
Sodium, Dissolved	**17500**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:30	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:30	7440-28-0	
Vanadium, Dissolved	**0.54J**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:30	7440-62-2	
Zinc, Dissolved	**16.4J**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:30	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:51	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**223**	mg/L	5.0	1.4	1		01/20/18 12:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**253**	mg/L	10.0	5.0	1		01/23/18 11:24		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		01/20/18 06:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.2	0.14	1		01/18/18 21:11	16887-00-6	B
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		01/18/18 21:11	14797-55-8	H3
Sulfate	**2.6**	mg/L	1.2	0.27	1		01/18/18 21:11	14808-79-8	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: MarlowNo2-GW-011618 **Lab ID: 10417533006** Collected: 01/16/18 09:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.014J**	mg/L	0.020	0.0075	1		01/20/18 15:07		B
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:45		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		01/19/18 18:06	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: W26-GW-011618 **Lab ID: 10417533007** Collected: 01/16/18 08:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 11:58	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 11:58	74-85-1	
Methane	**3.5J**	ug/L	10.0	1.1	1		01/22/18 11:58	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	01/22/18 09:53	01/23/18 14:33	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	01/22/18 09:53	01/23/18 14:33	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/22/18 09:53	01/23/18 14:33	7440-38-2	
Barium, Dissolved	**6.2J**	ug/L	10.0	0.22	1	01/22/18 09:53	01/23/18 14:33	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/22/18 09:53	01/23/18 14:33	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/22/18 09:53	01/23/18 14:33	7440-43-9	
Calcium, Dissolved	**36500**	ug/L	500	24.7	1	01/22/18 09:53	01/23/18 14:33	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	01/22/18 09:53	01/23/18 14:33	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	01/22/18 09:53	01/23/18 14:33	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	01/22/18 09:53	01/23/18 14:33	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	01/22/18 09:53	01/23/18 14:33	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/22/18 09:53	01/23/18 14:33	7439-92-1	
Magnesium, Dissolved	**10900**	ug/L	500	2.6	1	01/22/18 09:53	01/23/18 14:33	7439-95-4	
Manganese, Dissolved	**0.39J**	ug/L	5.0	0.38	1	01/22/18 09:53	01/23/18 14:33	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/22/18 09:53	01/23/18 14:33	7440-02-0	
Potassium, Dissolved	**2180J**	ug/L	2500	126	1	01/22/18 09:53	01/23/18 14:33	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/22/18 09:53	01/23/18 14:33	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/22/18 09:53	01/23/18 14:33	7440-22-4	
Sodium, Dissolved	**12900**	ug/L	1000	44.6	1	01/22/18 09:53	01/23/18 14:33	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	01/22/18 09:53	01/23/18 14:33	7440-28-0	
Vanadium, Dissolved	**7.0J**	ug/L	15.0	0.42	1	01/22/18 09:53	01/23/18 14:33	7440-62-2	
Zinc, Dissolved	**87.1**	ug/L	20.0	1.8	1	01/22/18 09:53	01/23/18 14:33	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	01/22/18 10:34	01/28/18 18:53	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**144**	mg/L	5.0	1.4	1		01/20/18 12:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**226**	mg/L	10.0	5.0	1		01/23/18 11:24		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		01/20/18 06:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.2**	mg/L	1.2	0.14	1		01/18/18 21:26	16887-00-6	
Nitrate as N	**2.1**	mg/L	0.10	0.0079	1		01/18/18 21:26	14797-55-8	H3
Sulfate	**9.0**	mg/L	1.2	0.27	1		01/18/18 21:26	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Sample: W26-GW-011618 **Lab ID: 10417533007** Collected: 01/16/18 08:30 Received: 01/18/18 11:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.9**	mg/L	0.020	0.0075	1		01/20/18 15:08		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:45		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.56J**	mg/L	1.0	0.20	1		01/19/18 18:19	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 519076 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2819312 Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	01/22/18 10:51	
Ethene	ug/L	<0.68	10.0	0.68	01/22/18 10:51	
Methane	ug/L	3.6J	10.0	1.1	01/22/18 10:51	

LABORATORY CONTROL SAMPLE & LCSD: 2819313 2819314

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	104	94	91	85-115	3	20	
Ethene	ug/L	106	100	97.7	94	92	85-115	3	20	
Methane	ug/L	60.7	59.4	57.9	98	95	85-115	3	20	

SAMPLE DUPLICATE: 2819315

Parameter	Units	10417533001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	6.3J	7.1J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 518795 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2817933 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	01/28/18 18:34	

LABORATORY CONTROL SAMPLE: 2817934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817935 2817936

Parameter	Units	10417533002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.0	5.1	101	102	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 518791 Analysis Method: 6010C Met
QC Batch Method: EPA 3010 Analysis Description: 6010C Water Dissolved
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2817917 Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	01/23/18 13:55	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	01/23/18 13:55	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	01/23/18 13:55	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	01/23/18 13:55	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	01/23/18 13:55	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	01/23/18 13:55	
Calcium, Dissolved	ug/L	<24.7	500	24.7	01/23/18 13:55	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	01/23/18 13:55	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	01/23/18 13:55	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	01/23/18 13:55	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	01/23/18 13:55	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	01/23/18 13:55	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	01/23/18 13:55	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	01/23/18 13:55	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	01/23/18 13:55	
Potassium, Dissolved	ug/L	<126	2500	126	01/23/18 13:55	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	01/23/18 13:55	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	01/23/18 13:55	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	01/23/18 13:55	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	01/23/18 13:55	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	01/23/18 13:55	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	01/23/18 13:55	

LABORATORY CONTROL SAMPLE: 2817918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21300	106	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	981	98	80-120	
Barium, Dissolved	ug/L	1000	1010	101	80-120	
Beryllium, Dissolved	ug/L	1000	999	100	80-120	
Cadmium, Dissolved	ug/L	1000	993	99	80-120	
Calcium, Dissolved	ug/L	20000	19500	97	80-120	
Chromium, Dissolved	ug/L	1000	978	98	80-120	
Cobalt, Dissolved	ug/L	1000	987	99	80-120	
Copper, Dissolved	ug/L	1000	993	99	80-120	
Iron, Dissolved	ug/L	20000	20000	100	80-120	
Lead, Dissolved	ug/L	1000	1000	100	80-120	
Magnesium, Dissolved	ug/L	20000	20200	101	80-120	
Manganese, Dissolved	ug/L	1000	1000	100	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

LABORATORY CONTROL SAMPLE: 2817918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	986	99	80-120	
Potassium, Dissolved	ug/L	20000	20000	100	80-120	
Selenium, Dissolved	ug/L	1000	1050	105	80-120	
Silver, Dissolved	ug/L	500	492	98	80-120	
Sodium, Dissolved	ug/L	20000	19800	99	80-120	
Thallium, Dissolved	ug/L	1000	983	98	80-120	
Vanadium, Dissolved	ug/L	1000	963	96	80-120	
Zinc, Dissolved	ug/L	1000	987	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817919 2817920

Parameter	Units	10417533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	121J	20000	20000	21500	22000	107	110	75-125	2	20	
Antimony, Dissolved	ug/L	3.6J	1000	1000	1030	1050	103	105	75-125	2	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	998	1020	100	102	75-125	2	20	
Barium, Dissolved	ug/L	78.5	1000	1000	1070	1090	99	101	75-125	2	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1010	1030	101	103	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	995	1020	99	102	75-125	2	20	
Calcium, Dissolved	ug/L	63600	20000	20000	83700	84900	100	106	75-125	1	20	
Chromium, Dissolved	ug/L	0.67J	1000	1000	967	988	97	99	75-125	2	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	963	983	96	98	75-125	2	20	
Copper, Dissolved	ug/L	3.3J	1000	1000	1010	1040	101	103	75-125	2	20	
Iron, Dissolved	ug/L	352	20000	20000	20000	20400	98	100	75-125	2	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	972	992	97	99	75-125	2	20	
Magnesium, Dissolved	ug/L	13000	20000	20000	33300	33900	102	104	75-125	2	20	
Manganese, Dissolved	ug/L	8.3	1000	1000	986	1010	98	100	75-125	2	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	958	978	96	98	75-125	2	20	
Potassium, Dissolved	ug/L	6800	20000	20000	28900	29400	110	113	75-125	2	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1040	1060	104	106	75-125	2	20	
Silver, Dissolved	ug/L	<0.27	500	500	497	507	99	101	75-125	2	20	
Sodium, Dissolved	ug/L	161000	20000	20000	181000	184000	100	116	75-125	2	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	936	957	93	95	75-125	2	20	
Vanadium, Dissolved	ug/L	3.4J	1000	1000	970	990	97	99	75-125	2	20	
Zinc, Dissolved	ug/L	9.1J	1000	1000	964	981	95	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 519002 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2818979 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	01/20/18 10:47	

LABORATORY CONTROL SAMPLE & LCSD: 2818980 | 2818981

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	40.6	40.6	102	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2818982 | 2818983

Parameter	Units	10417284002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	68.2	40	40	108	106	98	94	80-120	2	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2818984 | 2818985

Parameter	Units	10417719004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	530	40	40	592	590	155	151	80-120	0	30	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 518813 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005

METHOD BLANK: 2817978 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	01/19/18 11:18	

LABORATORY CONTROL SAMPLE: 2817979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	962	96	80-120	

SAMPLE DUPLICATE: 2817980

Parameter	Units	10417283001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2150	2180	1	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 519271 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10417533006, 10417533007

METHOD BLANK: 2820150 | Matrix: Water
Associated Lab Samples: 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	01/23/18 11:24	

LABORATORY CONTROL SAMPLE: 2820151

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 2820152

Parameter	Units	10417319002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	546	1	10	

SAMPLE DUPLICATE: 2820153

Parameter	Units	10417319003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	<5.0		10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 99507 — Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D — Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 428819 — Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	01/20/18 06:20	

LABORATORY CONTROL SAMPLE: 428820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	95	90-110	

MATRIX SPIKE SAMPLE: 428822

Parameter	Units	10417533001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.074	37	75-125	M1

SAMPLE DUPLICATE: 428821

Parameter	Units	10417533001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 518710 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2817282 Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533003, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.28J	1.2	0.14	01/18/18 16:55	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	01/18/18 16:55	
Sulfate	mg/L	0.44J	1.2	0.27	01/18/18 16:55	

LABORATORY CONTROL SAMPLE: 2817283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817284 2817285

Parameter	Units	10417533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	326	125	125	364	429	30	82	90-110	16	20	M6
Nitrate as N	mg/L	2.7	1	1	3.4	3.4	70	75	90-110	1	20	H3,M1
Sulfate	mg/L	19.1	12.5	12.5	29.2	29.6	81	84	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2817286 2817287

Parameter	Units	10417533002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.4	12.5	12.5	13.2	13.1	94	93	90-110	0	20	
Nitrate as N	mg/L	0.14	1	1	1.0	1.0	90	90	90-110	0	20	H3
Sulfate	mg/L	3.2	12.5	12.5	15.1	15.1	95	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 519014 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2819068 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.0081J	0.020	0.0075	01/20/18 15:12	FS

LABORATORY CONTROL SAMPLE: 2819069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.97	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819070 2819071

Parameter	Units	10417533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	2.6	5	5	7.0	7.0	89	90	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819072 2819073

Parameter	Units	10417533002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.15	1	1	1.1	1.1	97	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 519482 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 2821083 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533002, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	01/24/18 14:41	

LABORATORY CONTROL SAMPLE: 2821084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	310	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821085 2821086

Parameter	Units	10416719001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	19.0J	250	250	266	291	99	109	90-110	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821087 2821088

Parameter	Units	10416719002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	265	263	102	101	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 135447 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10417533001, 10417533004, 10417533005, 10417533006, 10417533007

METHOD BLANK: 539335 | Matrix: Water
Associated Lab Samples: 10417533001, 10417533004, 10417533005, 10417533006, 10417533007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	01/19/18 16:34	

LABORATORY CONTROL SAMPLE: 539336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	23.5	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 539337 539338

Parameter	Units	10417533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.2	25	25	25.2	25.3	92	92	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

QC Batch: 135790 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10417533002

METHOD BLANK: 540499 | Matrix: Water
Associated Lab Samples: 10417533002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	01/25/18 16:32	

LABORATORY CONTROL SAMPLE: 540500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 540501 540502

Parameter	Units	12104050005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.6	25.7	102	102	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 540503 540504

Parameter	Units	10418054002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.1	25	25	27.2	27.6	100	102	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10417533

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417533001	**MW9U-GW-011518**	RSK 175	519076		
10417533002	**MW3D-GW-011518**	RSK 175	519076		
10417533004	**MW2D-GW-011518**	RSK 175	519076		
10417533005	**MW6U-GW-011518**	RSK 175	519076		
10417533006	**MarlowNo2-GW-011618**	RSK 175	519076		
10417533007	**W26-GW-011618**	RSK 175	519076		
10417533001	**MW9U-GW-011518**	EPA 3010	518791	6010C Met	519256
10417533002	**MW3D-GW-011518**	EPA 3010	518791	6010C Met	519256
10417533004	**MW2D-GW-011518**	EPA 3010	518791	6010C Met	519256
10417533005	**MW6U-GW-011518**	EPA 3010	518791	6010C Met	519256
10417533006	**MarlowNo2-GW-011618**	EPA 3010	518791	6010C Met	519256
10417533007	**W26-GW-011618**	EPA 3010	518791	6010C Met	519256
10417533001	**MW9U-GW-011518**	EPA 7470A	518795	EPA 7470A	519168
10417533002	**MW3D-GW-011518**	EPA 7470A	518795	EPA 7470A	519168
10417533004	**MW2D-GW-011518**	EPA 7470A	518795	EPA 7470A	519168
10417533005	**MW6U-GW-011518**	EPA 7470A	518795	EPA 7470A	519168
10417533006	**MarlowNo2-GW-011618**	EPA 7470A	518795	EPA 7470A	519168
10417533007	**W26-GW-011618**	EPA 7470A	518795	EPA 7470A	519168
10417533001	**MW9U-GW-011518**	SM 2320B	519002		
10417533002	**MW3D-GW-011518**	SM 2320B	519002		
10417533003	**MW1S-GW-011518**	SM 2320B	519002		
10417533004	**MW2D-GW-011518**	SM 2320B	519002		
10417533005	**MW6U-GW-011518**	SM 2320B	519002		
10417533006	**MarlowNo2-GW-011618**	SM 2320B	519002		
10417533007	**W26-GW-011618**	SM 2320B	519002		
10417533001	**MW9U-GW-011518**	SM 2540C	518813		
10417533002	**MW3D-GW-011518**	SM 2540C	518813		
10417533003	**MW1S-GW-011518**	SM 2540C	518813		
10417533004	**MW2D-GW-011518**	SM 2540C	518813		
10417533005	**MW6U-GW-011518**	SM 2540C	518813		
10417533006	**MarlowNo2-GW-011618**	SM 2540C	519271		
10417533007	**W26-GW-011618**	SM 2540C	519271		
10417533001	**MW9U-GW-011518**	SM 4500-S-2 D	99507		
10417533002	**MW3D-GW-011518**	SM 4500-S-2 D	99507		
10417533004	**MW2D-GW-011518**	SM 4500-S-2 D	99507		
10417533005	**MW6U-GW-011518**	SM 4500-S-2 D	99507		
10417533006	**MarlowNo2-GW-011618**	SM 4500-S-2 D	99507		
10417533007	**W26-GW-011618**	SM 4500-S-2 D	99507		
10417533001	**MW9U-GW-011518**	EPA 300.0	518710		
10417533002	**MW3D-GW-011518**	EPA 300.0	518710		
10417533003	**MW1S-GW-011518**	EPA 300.0	518710		
10417533004	**MW2D-GW-011518**	EPA 300.0	518710		
10417533005	**MW6U-GW-011518**	EPA 300.0	518710		
10417533006	**MarlowNo2-GW-011618**	EPA 300.0	518710		
10417533007	**W26-GW-011618**	EPA 300.0	518710		

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10417533

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417533001	**MW9U-GW-011518**	EPA 353.2	519014		
10417533002	**MW3D-GW-011518**	EPA 353.2	519014		
10417533004	**MW2D-GW-011518**	EPA 353.2	519014		
10417533005	**MW6U-GW-011518**	EPA 353.2	519014		
10417533006	**MarlowNo2-GW-011618**	EPA 353.2	519014		
10417533007	**W26-GW-011618**	EPA 353.2	519014		
10417533001	**MW9U-GW-011518**	EPA 410.4	519482	EPA 410.4	519597
10417533002	**MW3D-GW-011518**	EPA 410.4	519482	EPA 410.4	519597
10417533004	**MW2D-GW-011518**	EPA 410.4	519482	EPA 410.4	519597
10417533005	**MW6U-GW-011518**	EPA 410.4	519482	EPA 410.4	519597
10417533006	**MarlowNo2-GW-011618**	EPA 410.4	519482	EPA 410.4	519597
10417533007	**W26-GW-011618**	EPA 410.4	519482	EPA 410.4	519597
10417533001	**MW9U-GW-011518**	SM 5310C	135447		
10417533002	**MW3D-GW-011518**	SM 5310C	135790		
10417533004	**MW2D-GW-011518**	SM 5310C	135447		
10417533005	**MW6U-GW-011518**	SM 5310C	135447		
10417533006	**MarlowNo2-GW-011618**	SM 5310C	135447		
10417533007	**W26-GW-011618**	SM 5310C	135447		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10417533

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	Pace Lab ID
1	MW9U-GW-011518	WT	G	1/15	1050	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		001
2	MW3D-GW-011518	WT	G	1/15	1240	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		002
3	MW1S-GW-011518	WT	G	1/15	1300	—	—	—	1	X									X	X	X							003
4	MW2D-GW-011518	WT	G	1/15	1415	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		004
5	MW6U-GW-011518	WT	G	1/15	1540	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		005
6	Marlow No2-GW-011618	WT	G	1/16	930	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		006
7	W26-GW-011618	WT	G	1/16	830	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X		007
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	1/16/18	1600	[signature] Pace	1/18/18	1140	1.4	Y	Y	Y
*Field filtered by client							0.8			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 1/16/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10417533

10417533

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9636 2015 / 7422 3740 3900

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.2, 0.6 **Cooler Temp Corrected (°C):** 1.4, 0.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 1/18/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☐ Yes	☒ No JMG 011818		5. 300.0 Nitrate, past hold
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☒ No		8. NO MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	~~☒ N/A~~	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	JMG 011818	12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Zn Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-2, 4-7: 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Lindsey/ Steve Date/Time: 01/18/18

Comments/Resolution: Client notified nitrate is past the holding time. -002 TOC container broken in sample receiving, per Steve proceed with volume remaining.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1205	Temp: 1.2, 0.6	Corrected Temp: 1.4, 0.8
Time: 1225	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/18/18

Note: Whenever there is a discrepancy affecting North Carolina compliar ... ›rm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2069151

2069151

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10417533 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 1/18/2018 Results Requested By: 2/1/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis: SM 6267/4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	SM 6267/4500 Sulfide	LAB USE ONLY
1	MW9U GW-011518	PS	1/15/2018 10:50	10417533001	Water	1	X	
2	MW3D GW-011518	PS	1/15/2018 12:40	10417533002	Water	1	X	
3	MW2D GW-011518	PS	1/15/2018 14:15	10417533004	Water	1	X	
4	MW6U GW-011518	PS	1/15/2018 15:40	10417533005	Water	1	X	
5	MarlowNo2 GW-011618	PS	1/16/2018 09:30	10417533006	Water	1	X	
6	W26 GW-011618	PS	1/16/2018 08:30	10417533007	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	PACE	1/18/18 1640		
2	FEDEX	1/19/18 11:00	PACE	1/19/18 11:00
3				

Comments:

Cooler Temperature on Receipt 1.0 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon R

Proj

WO# : 2069151

PM: CMM Due Date: 02/01/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ L

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1/19/18 JMS

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑ Yes ☐ No ☐ N/A	1
Chain of Custody Present:	☑ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☑ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☑ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes ☑ No ☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☑ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☑ Yes ☐ No ☐ N/A	8 500 Plastic preserved
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☑ N/A	9
Sample Labels match COC:	☑ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes ☐ No ☐ N/A	13 If No, was preserative added? ☐ Yes ☐ No If added record lot no.: HNO3 _______ H2SO4 _______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☑ N/A	14
Trip Blank Present:	☐ Yes ☑ No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

WO#: 12103882
PM: HRZ Due Date: 02/01/18
CLIENT: PACE MPLS

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10417533 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 1/18/2018 Results Requested By: 2/1/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis: SM 5310TOC / 5310TOC	LAB USE ONLY
1	MW9U-GW-011518	PS	1/15/2018 10:50	10417533001	Water	1	X	
2	MW3D-GW-011518	PS	1/15/2018 12:40	10417533002	Water	1	X	
3	MW2D-GW-011518	PS	1/15/2018 14:15	10417533004	Water	1	X	
4	MW6U-GW-011518	PS	1/15/2018 15:40	10417533005	Water	1	X	
5	MarlowNo2-GW-011618	PS	1/16/2018 09:30	10417533006	Water	1	X	
6	W26-GW-011618	PS	1/16/2018 08:30	10417533007	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	1/18/18 1715	[signature]	1-18 1830
2	[signature]	1-18 2230	B Mathews	1/19/18 07:00
3				

Comments:

Cooler Temperature on Receipt 0.6 °C | Custody Seal Ⓨ or N | Received on Ice Ⓨ or N | Samples Intact Ⓨ or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Seattle

Project #:

WO#: 12103882
PM: HRZ Due Date: 02/01/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.3 Cooler Temp Corrected °C: 0.6 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 1-18 BC

	Yes	No	N/A	Comments:
Chain of Custody Present?	☒	☐	☐	1.
Chain of Custody Filled Out?	☒	☐	☐	2.
Chain of Custody Relinquished?	☒	☐	☐	3.
Sampler Name and Signature on COC?	☐	☒	☐	4.
Samples Arrived within Hold Time?	☒	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☒	☐	6.
Rush Turn Around Time Requested?	☐	☒	☐	7.
Sufficient Volume?	☒	☐	☐	8.
Correct Containers Used?	☒	☐	☐	9.
-Pace Containers Used?	☒	☐	☐	
Containers Intact?	☒	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☒	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	~~☒~~ BM	☒	☐	12. NO 002 SAmple (see below)
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☒	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☒	14.
Trip Blank Present?	☐	☐	☒	15.
Trip Blank Custody Seals Present?	☐	☐	☒	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Note Attached saying sample 002 was broke in MPLS. BM 1/19/18

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 1/19/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 01, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10417794

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10417794001	**WS5-GW-011918**	Water	01/19/18 09:05	01/20/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10417794001	**WS5-GW-011918**	RSK 175	MJL	3	PASI-M
		6010C Met	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	JLM	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417794001	**WS5-GW-011918**					
RSK 175	Methane	2.0J	ug/L	10.0	01/22/18 12:20	
6010C Met	Aluminum, Dissolved	11.0J	ug/L	200	01/29/18 13:01	
6010C Met	Antimony, Dissolved	3.6J	ug/L	20.0	01/29/18 13:01	
6010C Met	Barium, Dissolved	71.3	ug/L	10.0	01/29/18 13:01	
6010C Met	Calcium, Dissolved	54400	ug/L	500	01/29/18 13:01	
6010C Met	Copper, Dissolved	13.2	ug/L	10.0	01/29/18 13:01	
6010C Met	Magnesium, Dissolved	21100	ug/L	500	01/29/18 13:01	
6010C Met	Potassium, Dissolved	4400	ug/L	2500	01/29/18 13:01	
6010C Met	Sodium, Dissolved	16700	ug/L	1000	01/29/18 13:01	
6010C Met	Thallium, Dissolved	6.8J	ug/L	20.0	01/29/18 13:01	
6010C Met	Vanadium, Dissolved	14.5J	ug/L	15.0	01/29/18 13:01	
6010C Met	Zinc, Dissolved	67.4	ug/L	20.0	01/29/18 13:01	
EPA 7470A	Mercury, Dissolved	0.069J	ug/L	0.20	01/31/18 15:49	
SM 2320B	Alkalinity, Total as CaCO3	224	mg/L	5.0	01/29/18 11:05	
SM 2540C	Total Dissolved Solids	282	mg/L	10.0	01/23/18 13:06	
EPA 300.0	Chloride	8.2	mg/L	1.2	01/20/18 15:21	
EPA 300.0	Nitrate as N	1.3	mg/L	0.10	01/20/18 15:21	
EPA 300.0	Sulfate	7.4	mg/L	1.2	01/20/18 15:21	
EPA 353.2	Nitrogen, NO2 plus NO3	1.4	mg/L	0.020	01/20/18 15:11	
SM 5310C	Total Organic Carbon	0.84J	mg/L	1.0	01/25/18 22:12	

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **6010C Met**
Description: 6010C MET ICP, Dissolved
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for 6010C Met. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 99988

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2069465001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 430879)
    - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519007

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417795001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2819013)
  - Sulfate
- MSD (Lab ID: 2819014)
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519014

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417533001,10417533002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2819070)
  - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M Hill
Date: February 01, 2018

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Sample: WS5-GW-011918 **Lab ID: 10417794001** Collected: 01/19/18 09:05 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		01/22/18 12:20	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		01/22/18 12:20	74-85-1	
Methane	**2.0J**	ug/L	10.0	1.1	1		01/22/18 12:20	74-82-8	
6010C MET ICP, Dissolved	Analytical Method: 6010C Met Preparation Method: EPA 3010								
Aluminum, Dissolved	**11.0J**	ug/L	200	8.6	1	01/26/18 10:30	01/29/18 13:01	7429-90-5	
Antimony, Dissolved	**3.6J**	ug/L	20.0	3.1	1	01/26/18 10:30	01/29/18 13:01	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	01/26/18 10:30	01/29/18 13:01	7440-38-2	
Barium, Dissolved	**71.3**	ug/L	10.0	0.22	1	01/26/18 10:30	01/29/18 13:01	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	01/26/18 10:30	01/29/18 13:01	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	01/26/18 10:30	01/29/18 13:01	7440-43-9	
Calcium, Dissolved	**54400**	ug/L	500	24.7	1	01/26/18 10:30	01/29/18 13:01	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	01/26/18 10:30	01/29/18 13:01	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	01/26/18 10:30	01/29/18 13:01	7440-48-4	
Copper, Dissolved	**13.2**	ug/L	10.0	0.83	1	01/26/18 10:30	01/29/18 13:01	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	01/26/18 10:30	01/29/18 13:01	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	01/26/18 10:30	01/29/18 13:01	7439-92-1	
Magnesium, Dissolved	**21100**	ug/L	500	2.6	1	01/26/18 10:30	01/29/18 13:01	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	01/26/18 10:30	01/29/18 13:01	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	01/26/18 10:30	01/29/18 13:01	7440-02-0	
Potassium, Dissolved	**4400**	ug/L	2500	126	1	01/26/18 10:30	01/29/18 13:01	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	01/26/18 10:30	01/29/18 13:01	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	01/26/18 10:30	01/29/18 13:01	7440-22-4	
Sodium, Dissolved	**16700**	ug/L	1000	44.6	1	01/26/18 10:30	01/29/18 13:01	7440-23-5	
Thallium, Dissolved	**6.8J**	ug/L	20.0	4.8	1	01/26/18 10:30	01/29/18 13:01	7440-28-0	
Vanadium, Dissolved	**14.5J**	ug/L	15.0	0.42	1	01/26/18 10:30	01/29/18 13:01	7440-62-2	
Zinc, Dissolved	**67.4**	ug/L	20.0	1.8	1	01/26/18 10:30	01/29/18 13:01	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.069J**	ug/L	0.20	0.062	1	01/31/18 09:00	01/31/18 15:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**224**	mg/L	5.0	1.4	1		01/29/18 11:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**282**	mg/L	10.0	5.0	1		01/23/18 13:06		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		01/25/18 13:37	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**8.2**	mg/L	1.2	0.14	1		01/20/18 15:21	16887-00-6	
Nitrate as N	**1.3**	mg/L	0.10	0.0079	1		01/20/18 15:21	14797-55-8	
Sulfate	**7.4**	mg/L	1.2	0.27	1		01/20/18 15:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Sample: WS5-GW-011918 **Lab ID: 10417794001** Collected: 01/19/18 09:05 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.4**	mg/L	0.020	0.0075	1		01/20/18 15:11		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	01/24/18 12:03	01/24/18 14:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.84J**	mg/L	1.0	0.20	1		01/25/18 22:12	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519076 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10417794001

METHOD BLANK: 2819312 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	01/22/18 10:51	
Ethene	ug/L	<0.68	10.0	0.68	01/22/18 10:51	
Methane	ug/L	3.6J	10.0	1.1	01/22/18 10:51	

LABORATORY CONTROL SAMPLE & LCSD: 2819313 2819314

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	104	94	91	85-115	3	20	
Ethene	ug/L	106	100	97.7	94	92	85-115	3	20	
Methane	ug/L	60.7	59.4	57.9	98	95	85-115	3	20	

SAMPLE DUPLICATE: 2819315

Parameter	Units	10417533001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	6.3J	7.1J		20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 520519 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10417794001

METHOD BLANK: 2826407 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	01/31/18 15:45	

LABORATORY CONTROL SAMPLE: 2826408

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826409 2826410

Parameter	Units	10417794001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	0.069J	5	5	4.6	4.6	91	91	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519883 | Analysis Method: 6010C Met
QC Batch Method: EPA 3010 | Analysis Description: 6010C Water Dissolved
Associated Lab Samples: 10417794001

METHOD BLANK: 2823369 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	01/29/18 12:55	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	01/29/18 12:55	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	01/29/18 12:55	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	01/29/18 12:55	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	01/29/18 12:55	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	01/29/18 12:55	
Calcium, Dissolved	ug/L	<24.7	500	24.7	01/29/18 12:55	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	01/29/18 12:55	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	01/29/18 12:55	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	01/29/18 12:55	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	01/29/18 12:55	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	01/29/18 12:55	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	01/29/18 12:55	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	01/29/18 12:55	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	01/29/18 12:55	
Potassium, Dissolved	ug/L	<126	2500	126	01/29/18 12:55	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	01/29/18 12:55	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	01/29/18 12:55	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	01/29/18 12:55	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	01/29/18 12:55	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	01/29/18 12:55	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	01/29/18 12:55	

LABORATORY CONTROL SAMPLE: 2823370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21700	108	80-120	
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1010	101	80-120	
Calcium, Dissolved	ug/L	20000	19700	98	80-120	
Chromium, Dissolved	ug/L	1000	1000	100	80-120	
Cobalt, Dissolved	ug/L	1000	1000	100	80-120	
Copper, Dissolved	ug/L	1000	996	100	80-120	
Iron, Dissolved	ug/L	20000	20500	103	80-120	
Lead, Dissolved	ug/L	1000	1010	101	80-120	
Magnesium, Dissolved	ug/L	20000	20400	102	80-120	
Manganese, Dissolved	ug/L	1000	1020	102	80-120	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

LABORATORY CONTROL SAMPLE: 2823370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	20300	102	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	497	99	80-120	
Sodium, Dissolved	ug/L	20000	20400	102	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	974	97	80-120	
Zinc, Dissolved	ug/L	1000	995	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2823371 2823372

Parameter	Units	50188881021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	20000	20000	23700	23200	118	116	75-125	2	20	
Antimony, Dissolved	ug/L	ND	1000	1000	1100	1090	110	108	75-125	1	20	
Arsenic, Dissolved	ug/L	52.2	1000	1000	1160	1140	110	108	75-125	2	20	
Barium, Dissolved	ug/L	182	1000	1000	1250	1240	107	105	75-125	1	20	
Beryllium, Dissolved	ug/L	ND	1000	1000	1100	1090	110	109	75-125	1	20	
Cadmium, Dissolved	ug/L	ND	1000	1000	1070	1060	107	106	75-125	1	20	
Calcium, Dissolved	ug/L	146000	20000	20000	171000	169000	125	116	75-125	1	20	
Chromium, Dissolved	ug/L	ND	1000	1000	1050	1030	105	103	75-125	1	20	
Cobalt, Dissolved	ug/L	ND	1000	1000	1030	1020	102	102	75-125	1	20	
Copper, Dissolved	ug/L	ND	1000	1000	1090	1070	109	107	75-125	2	20	
Iron, Dissolved	ug/L	538	20000	20000	21800	21600	106	105	75-125	1	20	
Lead, Dissolved	ug/L	ND	1000	1000	1040	1030	104	102	75-125	1	20	
Magnesium, Dissolved	ug/L	63400	20000	20000	87100	86100	119	114	75-125	1	20	
Manganese, Dissolved	ug/L	1420	1000	1000	2500	2470	108	105	75-125	1	20	
Nickel, Dissolved	ug/L	45.1	1000	1000	1080	1060	103	102	75-125	1	20	
Potassium, Dissolved	ug/L	ND	20000	20000	24200	23900	120	119	75-125	1	20	
Selenium, Dissolved	ug/L	ND	1000	1000	1110	1110	111	111	75-125	1	20	
Silver, Dissolved	ug/L	ND	500	500	532	526	106	105	75-125	1	20	
Sodium, Dissolved	ug/L	101000	20000	20000	125000	123000	119	111	75-125	1	20	
Thallium, Dissolved	ug/L	ND	1000	1000	1050	1030	104	102	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	75-125	1	20	
Zinc, Dissolved	ug/L	ND	1000	1000	984	979	98	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 520149 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10417794001

METHOD BLANK: 2824717 — Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	01/29/18 09:34	

LABORATORY CONTROL SAMPLE & LCSD: 2824718 2824719

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	40.9	41.3	102	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824720 2824721

Parameter	Units	10417734002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	104	40	40	141	143	91	97	80-120	2	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824722 2824723

Parameter	Units	10417734001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	115	40	40	151	153	90	94	80-120	1	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519334 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10417794001

METHOD BLANK: 2820420 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	01/23/18 13:06	

LABORATORY CONTROL SAMPLE & LCSD: 2820421 | 2820422

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	984	984	98	98	80-120	0	10	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 99988 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10417794001

METHOD BLANK: 430876 Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	01/25/18 13:34	

LABORATORY CONTROL SAMPLE: 430877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 430879

Parameter	Units	2069465001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.10	48	75-125	M1

SAMPLE DUPLICATE: 430878

Parameter	Units	2069465001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	0.0065J		20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519007 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10417794001

METHOD BLANK: 2819011 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.14	1.2	0.14	01/20/18 11:38	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	01/20/18 11:38	
Sulfate	mg/L	<0.27	1.2	0.27	01/20/18 11:38	

LABORATORY CONTROL SAMPLE: 2819012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.6	101	90-110	
Nitrate as N	mg/L	1	0.98	98	90-110	
Sulfate	mg/L	12.5	12.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819013 2819014

Parameter	Units	10417795001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.1	12.5	12.5	17.2	17.2	97	97	90-110	0	20	
Nitrate as N	mg/L	ND	1	1	0.98	0.98	94	94	90-110	0	20	
Sulfate	mg/L	48.7	12.5	12.5	56.5	56.4	62	61	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519014 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10417794001

METHOD BLANK: 2819068 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.0081J	0.020	0.0075	01/20/18 15:12	FS

LABORATORY CONTROL SAMPLE: 2819069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.97	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819070 2819071

Parameter	Units	10417533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	2.6	5	5	7.0	7.0	89	90	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819072 2819073

Parameter	Units	10417533002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.15	1	1	1.1	1.1	97	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 519482 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10417794001

METHOD BLANK: 2821083 Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	01/24/18 14:41	

LABORATORY CONTROL SAMPLE: 2821084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	310	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821085 2821086

Parameter	Units	10416719001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	19.0J	250	250	266	291	99	109	90-110	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821087 2821088

Parameter	Units	10416719002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	265	263	102	101	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

QC Batch: 135790 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10417794001

METHOD BLANK: 540499 | Matrix: Water
Associated Lab Samples: 10417794001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	01/25/18 16:32	

LABORATORY CONTROL SAMPLE: 540500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 540501 540502

Parameter	Units	12104050005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.6	25.7	102	102	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 540503 540504

Parameter	Units	10418054002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.1	25	25	27.2	27.6	100	102	80-120	2	20	

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QUALIFIERS

Project:	1497 UPRR_Freeman
Pace Project No.:	10417794

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417794

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417794001	**WS5-GW-011918**	RSK 175	519076		
10417794001	**WS5-GW-011918**	EPA 3010	519883	6010C Met	519962
10417794001	**WS5-GW-011918**	EPA 7470A	520519	EPA 7470A	520612
10417794001	**WS5-GW-011918**	SM 2320B	520149		
10417794001	**WS5-GW-011918**	SM 2540C	519334		
10417794001	**WS5-GW-011918**	SM 4500-S-2 D	99988		
10417794001	**WS5-GW-011918**	EPA 300.0	519007		
10417794001	**WS5-GW-011918**	EPA 353.2	519014		
10417794001	**WS5-GW-011918**	EPA 410.4	519482	EPA 410.4	519597
10417794001	**WS5-GW-011918**	SM 5310C	135790		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10417794

Page: 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	UPRR_Freeman
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Theriault
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	W55-GW-011918	WT	G	1/19	905	—	—	—	8	X	X	X		X				X	X	X	X	X	X	X	X	X	X			001
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	1/19/18	~~[illegible]~~	[signature] Pace	1-20-18	930	1.5	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 1/19/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M **Project #:**

WO# : 10417794

10417794

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2440

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.7 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** 1/20/18 TD

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		9.
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO3 ☑ H2SO4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1 1
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present? Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased):	☐ Yes ☐ Yes	☐ No ☐ No	☑ N/A ☑ N/A	15.

TD 1-20-18

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Steve Demus Date/Time: 01/22/18

Comments/Resolution: Notified client BOD container was not received.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time: 10:05	put in cooler 1.7	1.5
Time: 10:09	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/22/18

Note: Whenever there is a discrepancy affecting North Carolina complian[ce samples, a copy of this f]orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 12104014
PM: HRZ Due Date: 02/05/18
CLIENT: PACE MPLS

Workorder: 10417794 **Workorder Name:** 1497 UPRR_Freeman **Owner Received Date:** 1/20/2018 **Results Requested By:** 2/5/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4						Requested Analysis: 5632354 / 5310 TOC												LAB USE ONLY
1	WS5-GW-011918	PS	1/19/2018 09:05	10417794001	Water	1						X												
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Amy Hunt Pace	1/22/18 1510	[illegible]	1/23/18 1830
2	[illegible]	1/23/18 2105	B. Matthews	1/24/18 0715
3				

Comments

Cooler Temperature on Receipt 1.8 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO#: 12104014

PM: HRZ Due Date: 02/05/18

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other: Noz Pac

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5 Cooler Temp Corrected °C: 1.8

Temp should be above freezing to 6°C Correction Factor: +0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Date and Initials of Person Examining Contents: JDR 1/23/18

Comments: BM ~~1/23~~ 1/24/18

	Yes	No	N/A	Comments
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☑ BM	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑	☐	☐	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 1/24/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2069427

2069427

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10417794 **Workorder Name:** 1497 UPRR_Freeman **Owner Received Date:** 1/20/2018 **Results Requested By:** 2/5/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis: 5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	WS5-GW-011918	PS	1/19/2018 09:05	10417794001	Water	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] Pace	1/22/18 1450		
2	Fed EX	1-24-18 0840	[illegible] / Pace	1-24-18
3				

Comments: 0840

Cooler Temperature on Receipt 3.4 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Page 35 of 36

WO#:2069427

Pace Analytical

1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Re[ceipt]

PM: CMM Due Date: 02/07/18
CLIENT: PASI-MINN

Projec...

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 01-24-18 TD

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☐ Yes ☒ No ☐ N/A	1
Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☒ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	5
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☒ N/A	9
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	14
Trip Blank Present:	☐ Yes ☒ No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 26, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10417799

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10417799001	**WS5-GW-011918**	Water	01/19/18 09:05	01/20/18 09:30
10417799002	**Trip Blank**	Water	01/19/18 00:00	01/20/18 09:30

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10417799001	**WS5-GW-011918**	EPA 8260B	AEZ	83	PASI-M
10417799002	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417799001	**WS5-GW-011918**					
EPA 8260B	Carbon tetrachloride	61.8	ug/L	0.50	01/23/18 13:36	
EPA 8260B	Chloroform	2.3	ug/L	1.0	01/23/18 13:36	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill
Date: January 26, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519294

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417870001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2820252)
    - Acetone
    - Tetrahydrofuran
- MSD (Lab ID: 2820253)
    - Acetone
    - Tetrahydrofuran

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Sample: WS5-GW-011918 **Lab ID: 10417799001** Collected: 01/19/18 09:05 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/23/18 13:36	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/23/18 13:36	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/23/18 13:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/23/18 13:36	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:36	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:36	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/23/18 13:36	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:36	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/23/18 13:36	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/23/18 13:36	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/23/18 13:36	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/23/18 13:36	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	1.0	0.15	1		01/23/18 13:36	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/23/18 13:36	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/23/18 13:36	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:36	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:36	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/23/18 13:36	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/23/18 13:36	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/23/18 13:36	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/23/18 13:36	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/23/18 13:36	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:36	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/23/18 13:36	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/23/18 13:36	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/23/18 13:36	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/23/18 13:36	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/23/18 13:36	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:36	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/23/18 13:36	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:36	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/23/18 13:36	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/23/18 13:36	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/23/18 13:36	75-15-0	
Carbon tetrachloride	**61.8**	ug/L	0.50	0.20	1		01/23/18 13:36	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/23/18 13:36	75-00-3	
Chloroform	**2.3**	ug/L	1.0	0.46	1		01/23/18 13:36	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/23/18 13:36	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Sample: WS5-GW-011918 **Lab ID: 10417799001** Collected: 01/19/18 09:05 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/23/18 13:36	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/23/18 13:36	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/23/18 13:36	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/23/18 13:36	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/23/18 13:36	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/23/18 13:36	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/23/18 13:36	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:36	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/23/18 13:36	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/23/18 13:36	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/23/18 13:36	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/23/18 13:36	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/23/18 13:36	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/23/18 13:36	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:36	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:36	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/23/18 13:36	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:36	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:36	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/23/18 13:36	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:36	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:36	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/23/18 13:36	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/23/18 13:36	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/23/18 13:36	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:36	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/23/18 13:36	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	88	%.	75-137		1		01/23/18 13:36	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1		01/23/18 13:36	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		01/23/18 13:36	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Sample: Trip Blank **Lab ID: 10417799002** Collected: 01/19/18 00:00 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		01/23/18 13:04	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		01/23/18 13:04	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		01/23/18 13:04	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		01/23/18 13:04	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:04	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:04	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		01/23/18 13:04	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:04	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		01/23/18 13:04	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		01/23/18 13:04	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		01/23/18 13:04	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		01/23/18 13:04	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	1.0	0.15	1		01/23/18 13:04	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		01/23/18 13:04	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		01/23/18 13:04	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		01/23/18 13:04	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:04	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		01/23/18 13:04	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		01/23/18 13:04	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		01/23/18 13:04	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		01/23/18 13:04	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		01/23/18 13:04	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:04	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		01/23/18 13:04	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		01/23/18 13:04	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		01/23/18 13:04	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		01/23/18 13:04	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		01/23/18 13:04	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:04	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		01/23/18 13:04	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:04	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		01/23/18 13:04	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		01/23/18 13:04	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		01/23/18 13:04	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:04	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		01/23/18 13:04	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		01/23/18 13:04	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		01/23/18 13:04	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Sample: Trip Blank **Lab ID: 10417799002** Collected: 01/19/18 00:00 Received: 01/20/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		01/23/18 13:04	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		01/23/18 13:04	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		01/23/18 13:04	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		01/23/18 13:04	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		01/23/18 13:04	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		01/23/18 13:04	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		01/23/18 13:04	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		01/23/18 13:04	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		01/23/18 13:04	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		01/23/18 13:04	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		01/23/18 13:04	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		01/23/18 13:04	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		01/23/18 13:04	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		01/23/18 13:04	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		01/23/18 13:04	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:04	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		01/23/18 13:04	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		01/23/18 13:04	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:04	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		01/23/18 13:04	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:04	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		01/23/18 13:04	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		01/23/18 13:04	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		01/23/18 13:04	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		01/23/18 13:04	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		01/23/18 13:04	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		01/23/18 13:04	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	88	%.	75-137		1		01/23/18 13:04	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1		01/23/18 13:04	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		01/23/18 13:04	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

QC Batch: 519294 — Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B — Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10417799001, 10417799002

METHOD BLANK: 2820250 — Matrix: Water
Associated Lab Samples: 10417799001, 10417799002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	01/23/18 10:55	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	01/23/18 10:55	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	01/23/18 10:55	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	01/23/18 10:55	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	01/23/18 10:55	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	01/23/18 10:55	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	01/23/18 10:55	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	01/23/18 10:55	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	01/23/18 10:55	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	01/23/18 10:55	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	01/23/18 10:55	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	01/23/18 10:55	
1,2-Dichloroethane	ug/L	<0.15	1.0	0.15	01/23/18 10:55	MN
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	01/23/18 10:55	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	01/23/18 10:55	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	01/23/18 10:55	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	01/23/18 10:55	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	01/23/18 10:55	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	01/23/18 10:55	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	01/23/18 10:55	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	01/23/18 10:55	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	01/23/18 10:55	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	01/23/18 10:55	
2-Hexanone	ug/L	<2.5	5.0	2.5	01/23/18 10:55	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	01/23/18 10:55	
Acetone	ug/L	<8.8	20.0	8.8	01/23/18 10:55	
Acrolein	ug/L	<4.8	10.0	4.8	01/23/18 10:55	
Acrylonitrile	ug/L	<4.9	10.0	4.9	01/23/18 10:55	
Benzene	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
Bromobenzene	ug/L	<0.16	0.50	0.16	01/23/18 10:55	
Bromochloromethane	ug/L	<0.38	1.0	0.38	01/23/18 10:55	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	01/23/18 10:55	
Bromoform	ug/L	<1.0	4.0	1.0	01/23/18 10:55	
Bromomethane	ug/L	<1.5	4.0	1.5	01/23/18 10:55	
Carbon disulfide	ug/L	<0.37	1.0	0.37	01/23/18 10:55	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	01/23/18 10:55	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

METHOD BLANK: 2820250 Matrix: Water
Associated Lab Samples: 10417799001, 10417799002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
Chloroethane	ug/L	<0.44	1.0	0.44	01/23/18 10:55	
Chloroform	ug/L	<0.46	1.0	0.46	01/23/18 10:55	
Chloromethane	ug/L	<1.1	4.0	1.1	01/23/18 10:55	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	01/23/18 10:55	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	01/23/18 10:55	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
Dibromomethane	ug/L	<0.50	1.0	0.50	01/23/18 10:55	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	01/23/18 10:55	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	01/23/18 10:55	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	01/23/18 10:55	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
Ethylbenzene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	01/23/18 10:55	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
m&p-Xylene	ug/L	<0.24	1.0	0.24	01/23/18 10:55	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
Methylene Chloride	ug/L	<1.2	4.0	1.2	01/23/18 10:55	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	01/23/18 10:55	
Naphthalene	ug/L	<0.42	1.0	0.42	01/23/18 10:55	
o-Xylene	ug/L	<0.11	0.50	0.11	01/23/18 10:55	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	01/23/18 10:55	
Styrene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	01/23/18 10:55	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	01/23/18 10:55	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	01/23/18 10:55	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	01/23/18 10:55	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	01/23/18 10:55	
Toluene	ug/L	<0.17	0.50	0.17	01/23/18 10:55	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	01/23/18 10:55	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	01/23/18 10:55	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	01/23/18 10:55	
Trichloroethene	ug/L	<0.18	0.40	0.18	01/23/18 10:55	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	01/23/18 10:55	
Vinyl acetate	ug/L	<1.5	10.0	1.5	01/23/18 10:55	
Vinyl chloride	ug/L	<0.096	0.20	0.096	01/23/18 10:55	
Xylene (Total)	ug/L	<0.24	1.5	0.24	01/23/18 10:55	
1,2-Dichloroethane-d4 (S)	%.	87	75-137		01/23/18 10:55	
4-Bromofluorobenzene (S)	%.	96	75-125		01/23/18 10:55	
Toluene-d8 (S)	%.	95	75-125		01/23/18 10:55	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

LABORATORY CONTROL SAMPLE: 2820251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-136	
1,1,1-Trichloroethane	ug/L	20	18.7	93	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	71-138	
1,1,2-Trichloroethane	ug/L	20	20.1	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.7	103	69-126	
1,1-Dichloroethane	ug/L	20	18.9	94	75-125	
1,1-Dichloroethene	ug/L	20	18.7	93	75-125	
1,1-Dichloropropene	ug/L	20	18.8	94	75-125	
1,2,3-Trichlorobenzene	ug/L	20	19.5	98	75-125	
1,2,3-Trichloropropane	ug/L	20	19.9	99	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.0	100	75-125	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	45.8	92	71-130	
1,2-Dibromoethane (EDB)	ug/L	20	20.2	101	75-125	
1,2-Dichlorobenzene	ug/L	20	19.9	100	75-125	
1,2-Dichloroethane	ug/L	20	17.6	88	70-125	
1,2-Dichloroethene (Total)	ug/L	40	36.8	92	75-125	
1,2-Dichloropropane	ug/L	20	19.6	98	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.7	93	75-125	
1,3-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	19.3	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	415	104	64-140	
2,2,4-Trimethylpentane	ug/L	20	19.2	96	68-125	
2,2-Dichloropropane	ug/L	20	18.0	90	70-131	
2-Butanone (MEK)	ug/L	100	88.9	89	69-125	
2-Chlorotoluene	ug/L	20	18.6	93	75-125	
2-Hexanone	ug/L	100	91.8	92	73-129	
4-Chlorotoluene	ug/L	20	19.1	95	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.6	96	73-125	
Acetone	ug/L	100	106	106	66-126	
Acrolein	ug/L	200	203	102	56-150	
Acrylonitrile	ug/L	200	192	96	68-129	
Benzene	ug/L	20	19.2	96	75-125	
Bromobenzene	ug/L	20	20.4	102	75-125	
Bromochloromethane	ug/L	20	20.9	104	75-126	
Bromodichloromethane	ug/L	20	19.0	95	75-133	
Bromoform	ug/L	20	19.2	96	62-142	
Bromomethane	ug/L	20	16.5	83	34-143	
Carbon disulfide	ug/L	20	18.9	94	71-125	
Carbon tetrachloride	ug/L	20	18.7	94	71-145	
Chlorobenzene	ug/L	20	20.3	101	75-125	
Chloroethane	ug/L	20	18.2	91	75-125	
Chloroform	ug/L	20	18.1	90	75-125	
Chloromethane	ug/L	20	17.3	87	54-125	
cis-1,2-Dichloroethene	ug/L	20	18.4	92	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.3	101	75-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

LABORATORY CONTROL SAMPLE: 2820251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.3	101	74-141	
Dibromomethane	ug/L	20	20.9	105	75-125	
Dichlorodifluoromethane	ug/L	20	17.3	86	59-130	
Dichlorofluoromethane	ug/L	20	18.8	94	75-125	
Diisopropyl ether	ug/L	20	19.0	95	69-125	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	73-125	
Ethylbenzene	ug/L	20	18.8	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.4	107	75-131	
Isopropylbenzene (Cumene)	ug/L	20	19.6	98	75-125	
m&p-Xylene	ug/L	40	39.6	99	75-125	
Methyl-tert-butyl ether	ug/L	20	18.7	93	75-125	
Methylene Chloride	ug/L	20	17.9	89	73-125	
n-Butylbenzene	ug/L	20	18.4	92	75-125	
n-Propylbenzene	ug/L	20	18.3	91	75-125	
Naphthalene	ug/L	20	18.4	92	74-125	
o-Xylene	ug/L	20	19.2	96	75-125	
p-Isopropyltoluene	ug/L	20	18.9	94	75-125	
sec-Butylbenzene	ug/L	20	18.6	93	75-125	
Styrene	ug/L	20	20.1	101	75-125	
tert-Amylmethyl ether	ug/L	20	19.0	95	71-126	
tert-Butyl Alcohol	ug/L	200	188	94	69-131	
tert-Butylbenzene	ug/L	20	18.5	92	75-125	
Tetrachloroethene	ug/L	20	21.6	108	75-125	
Tetrahydrofuran	ug/L	200	215	108	65-127	
Toluene	ug/L	20	19.7	99	75-125	
trans-1,2-Dichloroethene	ug/L	20	18.3	92	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.2	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	42.4	85	30-150	
Trichloroethene	ug/L	20	19.4	97	75-125	
Trichlorofluoromethane	ug/L	20	19.2	96	71-140	
Vinyl acetate	ug/L	20	17.3	87	68-137	
Vinyl chloride	ug/L	20	18.4	92	70-125	
Xylene (Total)	ug/L	60	58.7	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			89	75-137	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820252 2820253

Parameter	Units	10417870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	19.6	19.6	98	98	75-137	0	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	19.2	20.0	96	100	75-139	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	18.3	19.0	91	95	60-142	4	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	20.2	20.4	101	102	75-128	1	30	

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820252 2820253

Parameter	Units	10417870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	22.9	23.5	114	117	62-150	2	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	19.7	20.1	97	99	70-129	2	30	
1,1-Dichloroethene	ug/L	<0.50	20	20	20.6	20.4	103	102	67-141	1	30	
1,1-Dichloropropene	ug/L	<0.50	20	20	20.1	20.6	101	103	64-144	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	18.8	19.6	94	98	66-139	4	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	19.5	19.9	98	99	69-134	2	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	19.5	20.1	98	100	65-138	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	18.7	19.0	93	95	65-143	1	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	44.6	48.2	89	96	61-134	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.9	19.8	99	99	74-129	0	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	19.8	20.2	99	101	68-135	2	30	
1,2-Dichloroethane	ug/L	<1.0	20	20	17.4	17.3	86	86	73-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	39.3	38.5	97	95	69-134	2	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	19.4	19.8	97	99	64-130	2	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	18.7	19.1	93	95	64-146	2	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	19.9	20.2	100	101	69-135	1	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	20.7	20.7	104	103	67-128	0	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	19.0	19.6	95	98	66-134	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	418	436	100	105	58-140	4	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	18.9	19.8	95	99	48-150	4	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	18.9	19.3	94	96	50-150	2	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	84.7	90.5	85	90	58-125	7	30	
2-Chlorotoluene	ug/L	<0.50	20	20	18.9	19.0	94	95	65-138	1	30	
2-Hexanone	ug/L	<5.0	100	100	89.1	94.5	89	95	61-134	6	30	
4-Chlorotoluene	ug/L	<0.50	20	20	19.0	19.3	95	96	68-135	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	93.2	98.7	93	99	61-130	6	30	
Acetone	ug/L	<20.0	100	100	146	145	145	144	51-140	0	30	M1
Acrolein	ug/L	<10.0	200	200	178	188	89	94	48-150	5	30	
Acrylonitrile	ug/L	<10.0	200	200	184	192	92	96	55-134	5	30	
Benzene	ug/L	<0.50	20	20	19.5	19.5	97	98	63-132	0	30	
Bromobenzene	ug/L	<0.50	20	20	20.3	20.5	101	103	67-138	1	30	
Bromochloromethane	ug/L	<1.0	20	20	20.5	20.9	103	104	66-138	2	30	
Bromodichloromethane	ug/L	<0.50	20	20	18.8	19.1	94	96	75-137	1	30	
Bromoform	ug/L	<4.0	20	20	18.2	19.4	91	97	65-129	6	30	
Bromomethane	ug/L	<4.0	20	20	15.8	17.3	79	87	41-150	9	30	
Carbon disulfide	ug/L	<1.0	20	20	20.3	20.1	101	100	72-132	1	30	
Carbon tetrachloride	ug/L	<0.50	20	20	20.1	20.4	101	102	75-150	1	30	
Chlorobenzene	ug/L	<0.50	20	20	20.4	20.6	102	103	73-127	1	30	
Chloroethane	ug/L	<1.0	20	20	19.4	19.0	97	95	74-138	2	30	
Chloroform	ug/L	<1.0	20	20	17.7	18.2	89	91	74-125	3	30	
Chloromethane	ug/L	<4.0	20	20	18.5	18.6	92	92	58-129	0	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	19.8	19.3	97	95	63-135	3	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	20.0	20.3	100	101	66-129	1	30	
Dibromochloromethane	ug/L	<0.50	20	20	19.7	20.2	99	101	75-133	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820252 2820253

Parameter	Units	10417870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	20.6	20.6	103	103	68-134	0	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	16.5	16.4	82	82	72-150	0	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	19.4	19.4	97	97	75-129	0	30	
Diisopropyl ether	ug/L	<1.0	20	20	18.5	18.8	92	94	62-128	2	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	18.7	19.2	94	96	63-132	2	30	
Ethylbenzene	ug/L	<0.50	20	20	19.1	19.2	95	96	72-130	1	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	21.0	21.7	105	108	71-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	20.4	20.7	102	103	70-136	1	30	
m&p-Xylene	ug/L	<1.0	40	40	40.3	40.4	101	101	64-142	0	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	18.3	18.8	91	94	72-125	3	30	
Methylene Chloride	ug/L	<4.0	20	20	18.0	18.3	90	91	60-132	2	30	
n-Butylbenzene	ug/L	<0.50	20	20	18.7	19.0	93	95	60-150	2	30	
n-Propylbenzene	ug/L	<0.50	20	20	18.7	19.0	93	95	63-142	2	30	
Naphthalene	ug/L	<1.0	20	20	17.9	19.2	89	96	67-125	7	30	
o-Xylene	ug/L	<0.50	20	20	19.6	19.5	98	97	60-143	1	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	19.1	19.5	95	97	64-146	2	30	
sec-Butylbenzene	ug/L	<0.50	20	20	18.9	19.1	94	95	67-144	1	30	
Styrene	ug/L	<0.50	20	20	19.9	20.5	100	103	67-136	3	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	18.7	19.1	94	96	60-134	2	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	180	192	90	96	56-146	6	30	
tert-Butylbenzene	ug/L	<0.50	20	20	19.0	19.1	95	96	68-135	1	30	
Tetrachloroethene	ug/L	<0.50	20	20	23.4	23.0	117	115	67-148	2	30	
Tetrahydrofuran	ug/L	<10.0	200	200	314	315	157	157	51-141	0	30	M1
Toluene	ug/L	<0.50	20	20	20.4	20.4	102	102	61-140	0	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	19.5	19.2	98	96	62-138	2	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	18.9	19.3	95	96	67-134	2	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	41.2	43.3	82	87	30-150	5	30	
Trichloroethene	ug/L	6.9	20	20	27.2	27.7	101	104	64-149	2	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	20.6	20.3	103	101	75-150	1	30	
Vinyl acetate	ug/L	<10.0	20	20	17.8	18.4	89	92	49-143	3	30	
Vinyl chloride	ug/L	ND	20	20	19.8	19.6	99	98	75-133	1	30	
Xylene (Total)	ug/L	<1.5	60	60	60.0	59.9	100	100	63-142	0	30	
1,2-Dichloroethane-d4 (S)	%.						89	90	75-137			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10417799

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417799001	**WS5-GW-011918**	EPA 8260B	519294		
10417799002	**Trip Blank**	EPA 8260B	519294		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10417799

Page : 1 Of 1

Section A
Required Client Information:

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500
Spokane, WA 99201
Email:
Phone: Fax:
Requested Due Date: *10 Day Standard*

Section B
Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: UPRR_Freeman
Project #: 1497

Section C
Invoice Information:

Attention: Anne Theriault
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: *36447 / 4*

Regulatory Agency

State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	WS5-GW-011918	WT	G	1/19	905	—	—	—	3				X				X													001
2	Trip Blank	↓	—	—	—	—	—	—	2				X				X													002
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	1/19/18	1500	[signature] Pace	1/20/18	935	15	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature] DATE Signed: 1/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M

Project #:

WO# : 10417799

10417799

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2440

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ ~~151401163~~ ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.7 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** 1/20/18 TO

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		9.
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): Not pace	☐ Yes	☑ No	☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time: 10:05	put in cooler 1.7	1.5
Time: 10:09	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/22/18

Note: Whenever there is a discrepancy affecting North Carolina compli[...]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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January 29, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman Cenex Harves
Pace Project No.:	10417800

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10417800001	**PSG/CC-WC-011818**	Solid	01/18/18 12:00	01/20/18 09:30
10417800002	**Trip Blank**	Solid	01/18/18 00:00	01/20/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10417800001	**PSG/CC-WC-011818**	EPA 6010C	DM	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D	AT1	72	PASI-M
		EPA 8260B	CD2	51	PASI-M
10417800002	**Trip Blank**	EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10417800001	**PSG/CC-WC-011818**					
EPA 6010C	Arsenic	2.9J	mg/kg	6.0	01/23/18 11:52	D3
EPA 6010C	Barium	257	mg/kg	3.0	01/23/18 11:52	
EPA 6010C	Cadmium	0.096J	mg/kg	0.90	01/23/18 11:52	D3
EPA 6010C	Chromium	18.4	mg/kg	3.0	01/23/18 11:52	
EPA 6010C	Lead	7.6	mg/kg	3.0	01/23/18 11:52	
EPA 7471B	Mercury	0.027	mg/kg	0.023	01/22/18 17:11	
ASTM D2974	Percent Moisture	22.0	%	0.10	01/22/18 12:09	

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
1 sample was analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 519051

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- PSG/CC-WC-011818 (Lab ID: 10417800001)
  - Silver
  - Arsenic
  - Cadmium
  - Selenium

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman Cenex Harves
Pace Project No.:	10417800

Method: **EPA 7471B**
Description: 7471B Mercury
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
1 sample was analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Method: **EPA 8270D**
Description: 8270D MSSV
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
1 sample was analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3550 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519322

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417800001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2820381)
  - 2,4-Dinitrophenol
  - 4,6-Dinitro-2-methylphenol
- MSD (Lab ID: 2820382)
  - 2,4-Dinitrophenol
  - 2,4-Dinitrotoluene
  - 2,6-Dinitrotoluene
  - 2-Nitroaniline
  - 2-Nitrophenol
  - 4,6-Dinitro-2-methylphenol

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Method: **EPA 8270D**
Description: 8270D MSSV
Client: UPRR_CH2M Hill
Date: January 29, 2018

QC Batch: 519322

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10417800001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- 4-Nitroaniline
- 4-Nitrophenol
- Hexachloroethane
- Nitrobenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2820382)
  - 2,6-Dinitrotoluene
  - 2-Nitroaniline
  - 3-Nitroaniline
  - 4-Nitroaniline
  - 4-Nitrophenol
  - Hexachloroethane
  - Nitrobenzene

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M Hill
Date: January 29, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 519727

R1: RPD value was outside control limits.
- LCSD (Lab ID: 2822222)
  - 2-Hexanone
  - Naphthalene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M Hill
Date: January 29, 2018

Analyte Comments:

QC Batch: 519727

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2822220)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- LCS (Lab ID: 2822221)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- LCSD (Lab ID: 2822222)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- PSG/CC-WC-011818 (Lab ID: 10417800001)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- Trip Blank (Lab ID: 10417800002)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: PSG/CC-WC-011818 **Lab ID: 10417800001** Collected: 01/18/18 12:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050								
Arsenic	**2.9J**	mg/kg	6.0	1.5	5	01/22/18 07:07	01/23/18 11:52	7440-38-2	D3
Barium	**257**	mg/kg	3.0	0.16	5	01/22/18 07:07	01/23/18 11:52	7440-39-3	
Cadmium	**0.096J**	mg/kg	0.90	0.092	5	01/22/18 07:07	01/23/18 11:52	7440-43-9	D3
Chromium	**18.4**	mg/kg	3.0	0.38	5	01/22/18 07:07	01/23/18 11:52	7440-47-3	
Lead	**7.6**	mg/kg	3.0	0.68	5	01/22/18 07:07	01/23/18 11:52	7439-92-1	
Selenium	**<2.5**	mg/kg	6.0	2.5	5	01/22/18 07:07	01/23/18 11:52	7782-49-2	D3
Silver	**<0.23**	mg/kg	3.0	0.23	5	01/22/18 07:07	01/23/18 11:52	7440-22-4	D3
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.027**	mg/kg	0.023	0.011	1	01/22/18 07:08	01/22/18 17:11	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.0**	%	0.10	0.10	1		01/22/18 12:09		
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
Acenaphthene	**<69.2**	ug/kg	422	69.2	1	01/23/18 19:48	01/25/18 23:50	83-32-9	
Acenaphthylene	**<58.0**	ug/kg	422	58.0	1	01/23/18 19:48	01/25/18 23:50	208-96-8	
Anthracene	**<60.9**	ug/kg	422	60.9	1	01/23/18 19:48	01/25/18 23:50	120-12-7	
Benzo(a)anthracene	**<49.1**	ug/kg	422	49.1	1	01/23/18 19:48	01/25/18 23:50	56-55-3	
Benzo(a)pyrene	**<47.9**	ug/kg	422	47.9	1	01/23/18 19:48	01/25/18 23:50	50-32-8	
Benzo(b)fluoranthene	**<51.2**	ug/kg	422	51.2	1	01/23/18 19:48	01/25/18 23:50	205-99-2	
Benzo(g,h,i)perylene	**<36.6**	ug/kg	422	36.6	1	01/23/18 19:48	01/25/18 23:50	191-24-2	
Benzo(k)fluoranthene	**<51.2**	ug/kg	422	51.2	1	01/23/18 19:48	01/25/18 23:50	207-08-9	
4-Bromophenylphenyl ether	**<71.3**	ug/kg	422	71.3	1	01/23/18 19:48	01/25/18 23:50	101-55-3	
Butylbenzylphthalate	**<93.7**	ug/kg	422	93.7	1	01/23/18 19:48	01/25/18 23:50	85-68-7	
Carbazole	**<56.8**	ug/kg	422	56.8	1	01/23/18 19:48	01/25/18 23:50	86-74-8	
4-Chloro-3-methylphenol	**<58.6**	ug/kg	422	58.6	1	01/23/18 19:48	01/25/18 23:50	59-50-7	
4-Chloroaniline	**<118**	ug/kg	422	118	1	01/23/18 19:48	01/25/18 23:50	106-47-8	
bis(2-Chloroethoxy)methane	**<82.0**	ug/kg	422	82.0	1	01/23/18 19:48	01/25/18 23:50	111-91-1	
bis(2-Chloroethyl) ether	**<92.7**	ug/kg	422	92.7	1	01/23/18 19:48	01/25/18 23:50	111-44-4	
bis(2-Chloroisopropyl) ether	**<98.2**	ug/kg	422	98.2	1	01/23/18 19:48	01/25/18 23:50	108-60-1	
2-Chloronaphthalene	**<60.0**	ug/kg	422	60.0	1	01/23/18 19:48	01/25/18 23:50	91-58-7	
2-Chlorophenol	**<84.1**	ug/kg	422	84.1	1	01/23/18 19:48	01/25/18 23:50	95-57-8	
4-Chlorophenylphenyl ether	**<57.8**	ug/kg	422	57.8	1	01/23/18 19:48	01/25/18 23:50	7005-72-3	
Chrysene	**<42.5**	ug/kg	422	42.5	1	01/23/18 19:48	01/25/18 23:50	218-01-9	
Dibenz(a,h)anthracene	**<43.6**	ug/kg	422	43.6	1	01/23/18 19:48	01/25/18 23:50	53-70-3	
Dibenzofuran	**<61.4**	ug/kg	422	61.4	1	01/23/18 19:48	01/25/18 23:50	132-64-9	
1,2-Dichlorobenzene	**<79.9**	ug/kg	422	79.9	1	01/23/18 19:48	01/25/18 23:50	95-50-1	
1,3-Dichlorobenzene	**<78.8**	ug/kg	422	78.8	1	01/23/18 19:48	01/25/18 23:50	541-73-1	
1,4-Dichlorobenzene	**<77.0**	ug/kg	422	77.0	1	01/23/18 19:48	01/25/18 23:50	106-46-7	
3,3'-Dichlorobenzidine	**<101**	ug/kg	422	101	1	01/23/18 19:48	01/25/18 23:50	91-94-1	
2,4-Dichlorophenol	**<79.7**	ug/kg	422	79.7	1	01/23/18 19:48	01/25/18 23:50	120-83-2	
Diethylphthalate	**<50.2**	ug/kg	422	50.2	1	01/23/18 19:48	01/25/18 23:50	84-66-2	
2,4-Dimethylphenol	**<159**	ug/kg	422	159	1	01/23/18 19:48	01/25/18 23:50	105-67-9	
Dimethylphthalate	**<65.1**	ug/kg	422	65.1	1	01/23/18 19:48	01/25/18 23:50	131-11-3	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: PSG/CC-WC-011818 **Lab ID: 10417800001** Collected: 01/18/18 12:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
Di-n-butylphthalate	**<57.8**	ug/kg	422	57.8	1	01/23/18 19:48	01/25/18 23:50	84-74-2	
4,6-Dinitro-2-methylphenol	**<170**	ug/kg	2180	170	1	01/23/18 19:48	01/25/18 23:50	534-52-1	M1
2,4-Dinitrophenol	**<95.1**	ug/kg	422	95.1	1	01/23/18 19:48	01/25/18 23:50	51-28-5	M1
2,4-Dinitrotoluene	**<57.2**	ug/kg	422	57.2	1	01/23/18 19:48	01/25/18 23:50	121-14-2	M1
2,6-Dinitrotoluene	**<59.0**	ug/kg	422	59.0	1	01/23/18 19:48	01/25/18 23:50	606-20-2	M1,R1
Di-n-octylphthalate	**<129**	ug/kg	422	129	1	01/23/18 19:48	01/25/18 23:50	117-84-0	
1,2-Diphenylhydrazine	**<76.4**	ug/kg	422	76.4	1	01/23/18 19:48	01/25/18 23:50	122-66-7	
bis(2-Ethylhexyl)phthalate	**<108**	ug/kg	422	108	1	01/23/18 19:48	01/25/18 23:50	117-81-7	
Fluoranthene	**<45.2**	ug/kg	422	45.2	1	01/23/18 19:48	01/25/18 23:50	206-44-0	
Fluorene	**<59.0**	ug/kg	422	59.0	1	01/23/18 19:48	01/25/18 23:50	86-73-7	
Hexachloro-1,3-butadiene	**<97.5**	ug/kg	422	97.5	1	01/23/18 19:48	01/25/18 23:50	87-68-3	
Hexachlorobenzene	**<54.6**	ug/kg	422	54.6	1	01/23/18 19:48	01/25/18 23:50	118-74-1	
Hexachloroethane	**<86.5**	ug/kg	422	86.5	1	01/23/18 19:48	01/25/18 23:50	67-72-1	M1,R1
Indeno(1,2,3-cd)pyrene	**<49.3**	ug/kg	422	49.3	1	01/23/18 19:48	01/25/18 23:50	193-39-5	
Isophorone	**<97.0**	ug/kg	422	97.0	1	01/23/18 19:48	01/25/18 23:50	78-59-1	
1-Methylnaphthalene	**<66.4**	ug/kg	422	66.4	1	01/23/18 19:48	01/25/18 23:50	90-12-0	
2-Methylnaphthalene	**<65.5**	ug/kg	422	65.5	1	01/23/18 19:48	01/25/18 23:50	91-57-6	
2-Methylphenol(o-Cresol)	**<106**	ug/kg	422	106	1	01/23/18 19:48	01/25/18 23:50	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<95.3**	ug/kg	845	95.3	1	01/23/18 19:48	01/25/18 23:50		
Naphthalene	**<80.5**	ug/kg	422	80.5	1	01/23/18 19:48	01/25/18 23:50	91-20-3	
2-Nitroaniline	**<93.4**	ug/kg	422	93.4	1	01/23/18 19:48	01/25/18 23:50	88-74-4	M1,R1
3-Nitroaniline	**<104**	ug/kg	422	104	1	01/23/18 19:48	01/25/18 23:50	99-09-2	R1
4-Nitroaniline	**<75.4**	ug/kg	422	75.4	1	01/23/18 19:48	01/25/18 23:50	100-01-6	M1,R1
Nitrobenzene	**<85.0**	ug/kg	422	85.0	1	01/23/18 19:48	01/25/18 23:50	98-95-3	M1,R1
2-Nitrophenol	**<79.6**	ug/kg	422	79.6	1	01/23/18 19:48	01/25/18 23:50	88-75-5	M1
4-Nitrophenol	**<122**	ug/kg	422	122	1	01/23/18 19:48	01/25/18 23:50	100-02-7	M1,R1
N-Nitrosodimethylamine	**<111**	ug/kg	422	111	1	01/23/18 19:48	01/25/18 23:50	62-75-9	
N-Nitroso-di-n-propylamine	**<129**	ug/kg	422	129	1	01/23/18 19:48	01/25/18 23:50	621-64-7	
N-Nitrosodiphenylamine	**<52.0**	ug/kg	422	52.0	1	01/23/18 19:48	01/25/18 23:50	86-30-6	
Pentachlorophenol	**<125**	ug/kg	857	125	1	01/23/18 19:48	01/25/18 23:50	87-86-5	
Phenanthrene	**<58.0**	ug/kg	422	58.0	1	01/23/18 19:48	01/25/18 23:50	85-01-8	
Phenol	**<81.8**	ug/kg	422	81.8	1	01/23/18 19:48	01/25/18 23:50	108-95-2	
Pyrene	**<44.5**	ug/kg	422	44.5	1	01/23/18 19:48	01/25/18 23:50	129-00-0	
1,2,4-Trichlorobenzene	**<82.0**	ug/kg	422	82.0	1	01/23/18 19:48	01/25/18 23:50	120-82-1	
2,4,5-Trichlorophenol	**<82.5**	ug/kg	422	82.5	1	01/23/18 19:48	01/25/18 23:50	95-95-4	
2,4,6-Trichlorophenol	**<60.0**	ug/kg	422	60.0	1	01/23/18 19:48	01/25/18 23:50	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	60	%.	34-125		1	01/23/18 19:48	01/25/18 23:50	4165-60-0	
2-Fluorobiphenyl (S)	70	%.	39-125		1	01/23/18 19:48	01/25/18 23:50	321-60-8	
p-Terphenyl-d14 (S)	90	%.	52-125		1	01/23/18 19:48	01/25/18 23:50	1718-51-0	
Phenol-d6 (S)	59	%.	39-125		1	01/23/18 19:48	01/25/18 23:50	13127-88-3	
2-Fluorophenol (S)	62	%.	31-125		1	01/23/18 19:48	01/25/18 23:50	367-12-4	
2,4,6-Tribromophenol (S)	79	%.	38-125		1	01/23/18 19:48	01/25/18 23:50	118-79-6	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: PSG/CC-WC-011818 **Lab ID: 10417800001** Collected: 01/18/18 12:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<15.4**	ug/kg	68.2	15.4	1	01/25/18 10:43	01/25/18 18:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<31.0**	ug/kg	68.2	31.0	1	01/25/18 10:43	01/25/18 18:29	79-34-5	N2
1,1,2-Trichloroethane	**<18.6**	ug/kg	68.2	18.6	1	01/25/18 10:43	01/25/18 18:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<36.0**	ug/kg	273	36.0	1	01/25/18 10:43	01/25/18 18:29	76-13-1	
1,1-Dichloroethane	**<17.7**	ug/kg	68.2	17.7	1	01/25/18 10:43	01/25/18 18:29	75-34-3	
1,1-Dichloroethene	**<29.3**	ug/kg	273	29.3	1	01/25/18 10:43	01/25/18 18:29	75-35-4	
1,2,4-Trichlorobenzene	**<19.5**	ug/kg	68.2	19.5	1	01/25/18 10:43	01/25/18 18:29	120-82-1	
1,2,4-Trimethylbenzene	**<17.7**	ug/kg	68.2	17.7	1	01/25/18 10:43	01/25/18 18:29	95-63-6	
1,2-Dibromoethane (EDB)	**<27.1**	ug/kg	68.2	27.1	1	01/25/18 10:43	01/25/18 18:29	106-93-4	
1,2-Dichlorobenzene	**<14.9**	ug/kg	68.2	14.9	1	01/25/18 10:43	01/25/18 18:29	95-50-1	
1,2-Dichloroethane	**<25.0**	ug/kg	68.2	25.0	1	01/25/18 10:43	01/25/18 18:29	107-06-2	
1,3,5-Trimethylbenzene	**<13.2**	ug/kg	68.2	13.2	1	01/25/18 10:43	01/25/18 18:29	108-67-8	
1,3-Dichlorobenzene	**<23.2**	ug/kg	68.2	23.2	1	01/25/18 10:43	01/25/18 18:29	541-73-1	
1,4-Dichlorobenzene	**<24.8**	ug/kg	68.2	24.8	1	01/25/18 10:43	01/25/18 18:29	106-46-7	
2-Butanone (MEK)	**<122**	ug/kg	1360	122	1	01/25/18 10:43	01/25/18 18:29	78-93-3	
2-Hexanone	**<87.9**	ug/kg	341	87.9	1	01/25/18 10:43	01/25/18 18:29	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<90.3**	ug/kg	341	90.3	1	01/25/18 10:43	01/25/18 18:29	108-10-1	
Acetone	**<662**	ug/kg	1360	662	1	01/25/18 10:43	01/25/18 18:29	67-64-1	
Benzene	**<10.1**	ug/kg	27.3	10.1	1	01/25/18 10:43	01/25/18 18:29	71-43-2	
Bromodichloromethane	**<24.7**	ug/kg	68.2	24.7	1	01/25/18 10:43	01/25/18 18:29	75-27-4	
Bromoform	**<49.2**	ug/kg	682	49.2	1	01/25/18 10:43	01/25/18 18:29	75-25-2	
Bromomethane	**<72.7**	ug/kg	682	72.7	1	01/25/18 10:43	01/25/18 18:29	74-83-9	
Carbon tetrachloride	**<27.3**	ug/kg	273	27.3	1	01/25/18 10:43	01/25/18 18:29	56-23-5	
Chlorobenzene	**<20.3**	ug/kg	68.2	20.3	1	01/25/18 10:43	01/25/18 18:29	108-90-7	
Chloroethane	**<104**	ug/kg	682	104	1	01/25/18 10:43	01/25/18 18:29	75-00-3	
Chloroform	**<28.0**	ug/kg	68.2	28.0	1	01/25/18 10:43	01/25/18 18:29	67-66-3	
Chloromethane	**<44.2**	ug/kg	273	44.2	1	01/25/18 10:43	01/25/18 18:29	74-87-3	
Dibromochloromethane	**<68.2**	ug/kg	273	68.2	1	01/25/18 10:43	01/25/18 18:29	124-48-1	
Dichlorodifluoromethane	**<106**	ug/kg	273	106	1	01/25/18 10:43	01/25/18 18:29	75-71-8	
Ethylbenzene	**<19.8**	ug/kg	68.2	19.8	1	01/25/18 10:43	01/25/18 18:29	100-41-4	
Hexachloro-1,3-butadiene	**<70.4**	ug/kg	341	70.4	1	01/25/18 10:43	01/25/18 18:29	87-68-3	
Methyl-tert-butyl ether	**<21.3**	ug/kg	68.2	21.3	1	01/25/18 10:43	01/25/18 18:29	1634-04-4	
Methylene Chloride	**<35.2**	ug/kg	273	35.2	1	01/25/18 10:43	01/25/18 18:29	75-09-2	
Naphthalene	**<60.0**	ug/kg	273	60.0	1	01/25/18 10:43	01/25/18 18:29	91-20-3	
Styrene	**<18.4**	ug/kg	68.2	18.4	1	01/25/18 10:43	01/25/18 18:29	100-42-5	
Tetrachloroethene	**<28.5**	ug/kg	68.2	28.5	1	01/25/18 10:43	01/25/18 18:29	127-18-4	
Tetrahydrofuran	**<709**	ug/kg	2730	709	1	01/25/18 10:43	01/25/18 18:29	109-99-9	
Toluene	**<19.4**	ug/kg	68.2	19.4	1	01/25/18 10:43	01/25/18 18:29	108-88-3	
Trichloroethene	**<11.5**	ug/kg	68.2	11.5	1	01/25/18 10:43	01/25/18 18:29	79-01-6	N2
Trichlorofluoromethane	**<101**	ug/kg	273	101	1	01/25/18 10:43	01/25/18 18:29	75-69-4	
Vinyl acetate	**<86.5**	ug/kg	682	86.5	1	01/25/18 10:43	01/25/18 18:29	108-05-4	
Vinyl chloride	**<11.5**	ug/kg	27.3	11.5	1	01/25/18 10:43	01/25/18 18:29	75-01-4	
cis-1,2-Dichloroethene	**<12.3**	ug/kg	68.2	12.3	1	01/25/18 10:43	01/25/18 18:29	156-59-2	
cis-1,3-Dichloropropene	**<21.8**	ug/kg	68.2	21.8	1	01/25/18 10:43	01/25/18 18:29	10061-01-5	
m&p-Xylene	**<36.6**	ug/kg	136	36.6	1	01/25/18 10:43	01/25/18 18:29	179601-23-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: PSG/CC-WC-011818 **Lab ID: 10417800001** Collected: 01/18/18 12:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<18.3**	ug/kg	68.2	18.3	1	01/25/18 10:43	01/25/18 18:29	95-47-6	
trans-1,2-Dichloroethene	**<27.8**	ug/kg	68.2	27.8	1	01/25/18 10:43	01/25/18 18:29	156-60-5	
trans-1,3-Dichloropropene	**<48.7**	ug/kg	68.2	48.7	1	01/25/18 10:43	01/25/18 18:29	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	90	%.	75-125		1	01/25/18 10:43	01/25/18 18:29	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	01/25/18 10:43	01/25/18 18:29	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	01/25/18 10:43	01/25/18 18:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: Trip Blank **Lab ID: 10417800002** Collected: 01/18/18 00:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<11.3**	ug/kg	50.0	11.3	1	01/25/18 10:43	01/25/18 17:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<22.7**	ug/kg	50.0	22.7	1	01/25/18 10:43	01/25/18 17:52	79-34-5	N2
1,1,2-Trichloroethane	**<13.6**	ug/kg	50.0	13.6	1	01/25/18 10:43	01/25/18 17:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<26.4**	ug/kg	200	26.4	1	01/25/18 10:43	01/25/18 17:52	76-13-1	
1,1-Dichloroethane	**<13.0**	ug/kg	50.0	13.0	1	01/25/18 10:43	01/25/18 17:52	75-34-3	
1,1-Dichloroethene	**<21.5**	ug/kg	200	21.5	1	01/25/18 10:43	01/25/18 17:52	75-35-4	
1,2,4-Trichlorobenzene	**<14.3**	ug/kg	50.0	14.3	1	01/25/18 10:43	01/25/18 17:52	120-82-1	
1,2,4-Trimethylbenzene	**<13.0**	ug/kg	50.0	13.0	1	01/25/18 10:43	01/25/18 17:52	95-63-6	
1,2-Dibromoethane (EDB)	**<19.9**	ug/kg	50.0	19.9	1	01/25/18 10:43	01/25/18 17:52	106-93-4	
1,2-Dichlorobenzene	**<10.9**	ug/kg	50.0	10.9	1	01/25/18 10:43	01/25/18 17:52	95-50-1	
1,2-Dichloroethane	**<18.3**	ug/kg	50.0	18.3	1	01/25/18 10:43	01/25/18 17:52	107-06-2	
1,3,5-Trimethylbenzene	**<9.7**	ug/kg	50.0	9.7	1	01/25/18 10:43	01/25/18 17:52	108-67-8	
1,3-Dichlorobenzene	**<17.0**	ug/kg	50.0	17.0	1	01/25/18 10:43	01/25/18 17:52	541-73-1	
1,4-Dichlorobenzene	**<18.2**	ug/kg	50.0	18.2	1	01/25/18 10:43	01/25/18 17:52	106-46-7	
2-Butanone (MEK)	**<89.5**	ug/kg	1000	89.5	1	01/25/18 10:43	01/25/18 17:52	78-93-3	
2-Hexanone	**<64.4**	ug/kg	250	64.4	1	01/25/18 10:43	01/25/18 17:52	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<66.2**	ug/kg	250	66.2	1	01/25/18 10:43	01/25/18 17:52	108-10-1	
Acetone	**<485**	ug/kg	1000	485	1	01/25/18 10:43	01/25/18 17:52	67-64-1	
Benzene	**<7.4**	ug/kg	20.0	7.4	1	01/25/18 10:43	01/25/18 17:52	71-43-2	
Bromodichloromethane	**<18.1**	ug/kg	50.0	18.1	1	01/25/18 10:43	01/25/18 17:52	75-27-4	
Bromoform	**<36.1**	ug/kg	500	36.1	1	01/25/18 10:43	01/25/18 17:52	75-25-2	
Bromomethane	**<53.3**	ug/kg	500	53.3	1	01/25/18 10:43	01/25/18 17:52	74-83-9	
Carbon tetrachloride	**<20.0**	ug/kg	200	20.0	1	01/25/18 10:43	01/25/18 17:52	56-23-5	
Chlorobenzene	**<14.9**	ug/kg	50.0	14.9	1	01/25/18 10:43	01/25/18 17:52	108-90-7	
Chloroethane	**<76.6**	ug/kg	500	76.6	1	01/25/18 10:43	01/25/18 17:52	75-00-3	
Chloroform	**<20.5**	ug/kg	50.0	20.5	1	01/25/18 10:43	01/25/18 17:52	67-66-3	
Chloromethane	**<32.4**	ug/kg	200	32.4	1	01/25/18 10:43	01/25/18 17:52	74-87-3	
Dibromochloromethane	**<50.0**	ug/kg	200	50.0	1	01/25/18 10:43	01/25/18 17:52	124-48-1	
Dichlorodifluoromethane	**<78.0**	ug/kg	200	78.0	1	01/25/18 10:43	01/25/18 17:52	75-71-8	
Ethylbenzene	**<14.5**	ug/kg	50.0	14.5	1	01/25/18 10:43	01/25/18 17:52	100-41-4	
Hexachloro-1,3-butadiene	**<51.6**	ug/kg	250	51.6	1	01/25/18 10:43	01/25/18 17:52	87-68-3	
Methyl-tert-butyl ether	**<15.6**	ug/kg	50.0	15.6	1	01/25/18 10:43	01/25/18 17:52	1634-04-4	
Methylene Chloride	**<25.8**	ug/kg	200	25.8	1	01/25/18 10:43	01/25/18 17:52	75-09-2	
Naphthalene	**<44.0**	ug/kg	200	44.0	1	01/25/18 10:43	01/25/18 17:52	91-20-3	
Styrene	**<13.5**	ug/kg	50.0	13.5	1	01/25/18 10:43	01/25/18 17:52	100-42-5	
Tetrachloroethene	**<20.9**	ug/kg	50.0	20.9	1	01/25/18 10:43	01/25/18 17:52	127-18-4	
Tetrahydrofuran	**<520**	ug/kg	2000	520	1	01/25/18 10:43	01/25/18 17:52	109-99-9	
Toluene	**<14.2**	ug/kg	50.0	14.2	1	01/25/18 10:43	01/25/18 17:52	108-88-3	
Trichloroethene	**<8.5**	ug/kg	50.0	8.5	1	01/25/18 10:43	01/25/18 17:52	79-01-6	N2
Trichlorofluoromethane	**<74.3**	ug/kg	200	74.3	1	01/25/18 10:43	01/25/18 17:52	75-69-4	
Vinyl acetate	**<63.4**	ug/kg	500	63.4	1	01/25/18 10:43	01/25/18 17:52	108-05-4	
Vinyl chloride	**<8.4**	ug/kg	20.0	8.4	1	01/25/18 10:43	01/25/18 17:52	75-01-4	
cis-1,2-Dichloroethene	**<9.0**	ug/kg	50.0	9.0	1	01/25/18 10:43	01/25/18 17:52	156-59-2	
cis-1,3-Dichloropropene	**<16.0**	ug/kg	50.0	16.0	1	01/25/18 10:43	01/25/18 17:52	10061-01-5	
m&p-Xylene	**<26.8**	ug/kg	100	26.8	1	01/25/18 10:43	01/25/18 17:52	179601-23-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Sample: Trip Blank **Lab ID: 10417800002** Collected: 01/18/18 00:00 Received: 01/20/18 09:30 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<13.4**	ug/kg	50.0	13.4	1	01/25/18 10:43	01/25/18 17:52	95-47-6	
trans-1,2-Dichloroethene	**<20.4**	ug/kg	50.0	20.4	1	01/25/18 10:43	01/25/18 17:52	156-60-5	
trans-1,3-Dichloropropene	**<35.7**	ug/kg	50.0	35.7	1	01/25/18 10:43	01/25/18 17:52	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%.	75-125		1	01/25/18 10:43	01/25/18 17:52	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	01/25/18 10:43	01/25/18 17:52	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	01/25/18 10:43	01/25/18 17:52	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

QC Batch: 519065 | Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B | Analysis Description: 7471B Mercury Solids
Associated Lab Samples: 10417800001

METHOD BLANK: 2819269 | Matrix: Solid
Associated Lab Samples: 10417800001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0085	0.018	0.0085	01/22/18 16:50	

LABORATORY CONTROL SAMPLE: 2819270

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.44	0.42	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819271 2819272

Parameter	Units	10417766001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.49	.48	0.47	0.46	95	96	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

QC Batch: 519051 | Analysis Method: EPA 6010C
QC Batch Method: EPA 3050 | Analysis Description: 6010C Solids
Associated Lab Samples: 10417800001

METHOD BLANK: 2819209 | Matrix: Solid
Associated Lab Samples: 10417800001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.25	0.96	0.25	01/22/18 14:48	
Barium	mg/kg	<0.026	0.48	0.026	01/22/18 14:48	
Cadmium	mg/kg	<0.015	0.14	0.015	01/22/18 14:48	
Chromium	mg/kg	<0.061	0.48	0.061	01/22/18 14:48	
Lead	mg/kg	<0.11	0.48	0.11	01/22/18 14:48	
Selenium	mg/kg	<0.40	0.96	0.40	01/22/18 14:48	
Silver	mg/kg	<0.038	0.48	0.038	01/22/18 14:48	

LABORATORY CONTROL SAMPLE: 2819210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	47.5	95	80-120	
Barium	mg/kg	50	53.1	106	80-120	
Cadmium	mg/kg	50	48.8	98	80-120	
Chromium	mg/kg	50	52.7	105	80-120	
Lead	mg/kg	50	50.6	101	80-120	
Selenium	mg/kg	50	45.3	91	80-120	
Silver	mg/kg	25	24.1	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819211 2819212

Parameter	Units	10417766001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.1	51.8	52.8	47.2	47.8	89	89	75-125	1	20	
Barium	mg/kg	28.9	51.8	52.8	81.3	81.5	101	100	75-125	0	20	
Cadmium	mg/kg	ND	51.8	52.8	47.6	48.3	92	91	75-125	1	20	
Chromium	mg/kg	6.4	51.8	52.8	57.2	57.9	98	98	75-125	1	20	
Lead	mg/kg	2.0	51.8	52.8	50.3	51.0	93	93	75-125	1	20	
Selenium	mg/kg	ND	51.8	52.8	44.2	44.7	85	85	75-125	1	20	
Silver	mg/kg	ND	25.9	26.4	24.1	24.3	93	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

QC Batch: 519085 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10417800001

SAMPLE DUPLICATE: 2819510

Parameter	Units	10417800001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.0	23.3	6	30	

SAMPLE DUPLICATE: 2819569

Parameter	Units	10417585007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.3	23.4	14	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

QC Batch: 519727 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10417800001, 10417800002

METHOD BLANK: 2822220 Matrix: Solid
Associated Lab Samples: 10417800001, 10417800002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<11.3	50.0	11.3	01/25/18 12:53	
1,1,2,2-Tetrachloroethane	ug/kg	<22.7	50.0	22.7	01/25/18 12:53	N2
1,1,2-Trichloroethane	ug/kg	<13.6	50.0	13.6	01/25/18 12:53	
1,1,2-Trichlorotrifluoroethane	ug/kg	<26.4	200	26.4	01/25/18 12:53	
1,1-Dichloroethane	ug/kg	<13.0	50.0	13.0	01/25/18 12:53	
1,1-Dichloroethene	ug/kg	<21.5	200	21.5	01/25/18 12:53	MN
1,2,4-Trichlorobenzene	ug/kg	<14.3	50.0	14.3	01/25/18 12:53	
1,2,4-Trimethylbenzene	ug/kg	<13.0	50.0	13.0	01/25/18 12:53	
1,2-Dibromoethane (EDB)	ug/kg	<19.9	50.0	19.9	01/25/18 12:53	
1,2-Dichlorobenzene	ug/kg	<10.9	50.0	10.9	01/25/18 12:53	
1,2-Dichloroethane	ug/kg	<18.3	50.0	18.3	01/25/18 12:53	
1,3,5-Trimethylbenzene	ug/kg	<9.7	50.0	9.7	01/25/18 12:53	
1,3-Dichlorobenzene	ug/kg	<17.0	50.0	17.0	01/25/18 12:53	
1,4-Dichlorobenzene	ug/kg	<18.2	50.0	18.2	01/25/18 12:53	
2-Butanone (MEK)	ug/kg	<89.5	1000	89.5	01/25/18 12:53	MN
2-Hexanone	ug/kg	<64.4	250	64.4	01/25/18 12:53	
4-Methyl-2-pentanone (MIBK)	ug/kg	<66.2	250	66.2	01/25/18 12:53	
Acetone	ug/kg	<485	1000	485	01/25/18 12:53	
Benzene	ug/kg	<7.4	20.0	7.4	01/25/18 12:53	
Bromodichloromethane	ug/kg	<18.1	50.0	18.1	01/25/18 12:53	
Bromoform	ug/kg	<36.1	500	36.1	01/25/18 12:53	MN
Bromomethane	ug/kg	<53.3	500	53.3	01/25/18 12:53	
Carbon tetrachloride	ug/kg	<20.0	200	20.0	01/25/18 12:53	MN
Chlorobenzene	ug/kg	<14.9	50.0	14.9	01/25/18 12:53	
Chloroethane	ug/kg	<76.6	500	76.6	01/25/18 12:53	
Chloroform	ug/kg	<20.5	50.0	20.5	01/25/18 12:53	
Chloromethane	ug/kg	<32.4	200	32.4	01/25/18 12:53	
cis-1,2-Dichloroethene	ug/kg	<9.0	50.0	9.0	01/25/18 12:53	
cis-1,3-Dichloropropene	ug/kg	<16.0	50.0	16.0	01/25/18 12:53	
Dibromochloromethane	ug/kg	<50.0	200	50.0	01/25/18 12:53	
Dichlorodifluoromethane	ug/kg	<78.0	200	78.0	01/25/18 12:53	
Ethylbenzene	ug/kg	<14.5	50.0	14.5	01/25/18 12:53	
Hexachloro-1,3-butadiene	ug/kg	<51.6	250	51.6	01/25/18 12:53	
m&p-Xylene	ug/kg	<26.8	100	26.8	01/25/18 12:53	
Methyl-tert-butyl ether	ug/kg	<15.6	50.0	15.6	01/25/18 12:53	
Methylene Chloride	ug/kg	<25.8	200	25.8	01/25/18 12:53	
Naphthalene	ug/kg	<44.0	200	44.0	01/25/18 12:53	
o-Xylene	ug/kg	<13.4	50.0	13.4	01/25/18 12:53	
Styrene	ug/kg	<13.5	50.0	13.5	01/25/18 12:53	
Tetrachloroethene	ug/kg	<20.9	50.0	20.9	01/25/18 12:53	
Tetrahydrofuran	ug/kg	<520	2000	520	01/25/18 12:53	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

METHOD BLANK: 2822220 Matrix: Solid
Associated Lab Samples: 10417800001, 10417800002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	ug/kg	<14.2	50.0	14.2	01/25/18 12:53	
trans-1,2-Dichloroethene	ug/kg	<20.4	50.0	20.4	01/25/18 12:53	
trans-1,3-Dichloropropene	ug/kg	<35.7	50.0	35.7	01/25/18 12:53	
Trichloroethene	ug/kg	<8.5	50.0	8.5	01/25/18 12:53	N2
Trichlorofluoromethane	ug/kg	<74.3	200	74.3	01/25/18 12:53	
Vinyl acetate	ug/kg	<63.4	500	63.4	01/25/18 12:53	
Vinyl chloride	ug/kg	<8.4	20.0	8.4	01/25/18 12:53	
1,2-Dichloroethane-d4 (S)	%.	91	75-125		01/25/18 12:53	
4-Bromofluorobenzene (S)	%.	101	75-125		01/25/18 12:53	
Toluene-d8 (S)	%.	100	75-125		01/25/18 12:53	

LABORATORY CONTROL SAMPLE & LCSD: 2822221 2822222

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	1000	876	965	88	97	55-125	10	20	
1,1,2,2-Tetrachloroethane	ug/kg	1000	842	991	84	99	66-125	16	20	N2
1,1,2-Trichloroethane	ug/kg	1000	834	992	83	99	65-125	17	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	880	979	88	98	57-125	11	20	
1,1-Dichloroethane	ug/kg	1000	832	950	83	95	60-125	13	20	
1,1-Dichloroethene	ug/kg	1000	837	958	84	96	56-125	13	20	
1,2,4-Trichlorobenzene	ug/kg	1000	844	996	84	100	61-125	17	20	
1,2,4-Trimethylbenzene	ug/kg	1000	834	991	83	99	66-125	17	20	
1,2-Dibromoethane (EDB)	ug/kg	1000	844	986	84	99	68-125	16	20	
1,2-Dichlorobenzene	ug/kg	1000	855	958	85	96	63-125	11	20	
1,2-Dichloroethane	ug/kg	1000	775	887	78	89	46-125	13	20	
1,3,5-Trimethylbenzene	ug/kg	1000	888	1010	89	101	66-125	13	20	
1,3-Dichlorobenzene	ug/kg	1000	845	937	84	94	64-125	10	20	
1,4-Dichlorobenzene	ug/kg	1000	883	984	88	98	64-125	11	20	
2-Butanone (MEK)	ug/kg	5000	4060	4800	81	96	48-138	17	20	
2-Hexanone	ug/kg	5000	3640	4590	73	92	53-137	23	20	R1
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	3650	4430	73	89	54-141	19	20	
Acetone	ug/kg	5000	4960	5290	99	106	68-125	6	20	
Benzene	ug/kg	1000	828	927	83	93	61-125	11	20	
Bromodichloromethane	ug/kg	1000	837	925	84	92	55-125	10	20	
Bromoform	ug/kg	1000	773	913	77	91	37-125	17	20	
Bromomethane	ug/kg	1000	1040	982	104	98	47-125	5	20	
Carbon tetrachloride	ug/kg	1000	861	917	86	92	51-125	6	20	
Chlorobenzene	ug/kg	1000	881	980	88	98	63-125	11	20	
Chloroethane	ug/kg	1000	840	724	84	72	30-150	15	20	
Chloroform	ug/kg	1000	787	870	79	87	57-125	10	20	
Chloromethane	ug/kg	1000	866	755	87	76	45-125	14	20	
cis-1,2-Dichloroethene	ug/kg	1000	859	952	86	95	62-125	10	20	
cis-1,3-Dichloropropene	ug/kg	1000	928	1020	93	102	59-125	9	20	
Dibromochloromethane	ug/kg	1000	856	1010	86	101	51-125	16	20	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

LABORATORY CONTROL SAMPLE & LCSD: 2822221 2822222

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	ug/kg	1000	773	708	77	71	30-125	9	20	
Ethylbenzene	ug/kg	1000	873	985	87	99	65-125	12	20	
Hexachloro-1,3-butadiene	ug/kg	1000	851	969	85	97	58-125	13	20	
m&p-Xylene	ug/kg	2000	1770	2010	89	100	67-125	12	20	
Methyl-tert-butyl ether	ug/kg	1000	806	908	81	91	60-125	12	20	
Methylene Chloride	ug/kg	1000	754	810	75	81	57-125	7	20	
Naphthalene	ug/kg	1000	813	1010	81	101	61-125	22	20	R1
o-Xylene	ug/kg	1000	851	949	85	95	66-125	11	20	
Styrene	ug/kg	1000	862	1040	86	104	66-125	19	20	
Tetrachloroethene	ug/kg	1000	921	1070	92	107	65-125	15	20	
Tetrahydrofuran	ug/kg	10000	9530	10100	95	101	68-125	5	20	
Toluene	ug/kg	1000	858	989	86	99	67-125	14	20	
trans-1,2-Dichloroethene	ug/kg	1000	847	947	85	95	56-125	11	20	
trans-1,3-Dichloropropene	ug/kg	1000	849	966	85	97	63-125	13	20	
Trichloroethene	ug/kg	1000	897	977	90	98	63-125	9	20	N2
Trichlorofluoromethane	ug/kg	1000	936	834	94	83	35-141	12	20	
Vinyl acetate	ug/kg	1000	791	928	79	93	50-125	16	20	
Vinyl chloride	ug/kg	1000	793	741	79	74	53-125	7	20	
1,2-Dichloroethane-d4 (S)	%.				95	92	75-125			
4-Bromofluorobenzene (S)	%.				95	101	75-125			
Toluene-d8 (S)	%.				98	101	75-125			

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

QC Batch: 519322 Analysis Method: EPA 8270D
QC Batch Method: EPA 3550 Analysis Description: 8270D Solid MSSV
Associated Lab Samples: 10417800001

METHOD BLANK: 2820379 Matrix: Solid
Associated Lab Samples: 10417800001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	<64.1	330	64.1	01/25/18 20:19	
1,2-Dichlorobenzene	ug/kg	<62.4	330	62.4	01/25/18 20:19	
1,2-Diphenylhydrazine	ug/kg	<59.7	330	59.7	01/25/18 20:19	
1,3-Dichlorobenzene	ug/kg	<61.6	330	61.6	01/25/18 20:19	
1,4-Dichlorobenzene	ug/kg	<60.2	330	60.2	01/25/18 20:19	
1-Methylnaphthalene	ug/kg	<51.9	330	51.9	01/25/18 20:19	
2,4,5-Trichlorophenol	ug/kg	<64.5	330	64.5	01/25/18 20:19	
2,4,6-Trichlorophenol	ug/kg	<46.9	330	46.9	01/25/18 20:19	
2,4-Dichlorophenol	ug/kg	<62.3	330	62.3	01/25/18 20:19	
2,4-Dimethylphenol	ug/kg	<124	330	124	01/25/18 20:19	
2,4-Dinitrophenol	ug/kg	<74.3	330	74.3	01/25/18 20:19	
2,4-Dinitrotoluene	ug/kg	<44.7	330	44.7	01/25/18 20:19	
2,6-Dinitrotoluene	ug/kg	<46.1	330	46.1	01/25/18 20:19	
2-Chloronaphthalene	ug/kg	<46.9	330	46.9	01/25/18 20:19	
2-Chlorophenol	ug/kg	<65.7	330	65.7	01/25/18 20:19	
2-Methylnaphthalene	ug/kg	<51.2	330	51.2	01/25/18 20:19	
2-Methylphenol(o-Cresol)	ug/kg	<83.2	330	83.2	01/25/18 20:19	
2-Nitroaniline	ug/kg	<73.0	330	73.0	01/25/18 20:19	
2-Nitrophenol	ug/kg	<62.2	330	62.2	01/25/18 20:19	
3&4-Methylphenol(m&p Cresol)	ug/kg	<74.5	660	74.5	01/25/18 20:19	
3,3'-Dichlorobenzidine	ug/kg	<79.0	330	79.0	01/25/18 20:19	
3-Nitroaniline	ug/kg	<80.9	330	80.9	01/25/18 20:19	
4,6-Dinitro-2-methylphenol	ug/kg	<133	1700	133	01/25/18 20:19	
4-Bromophenylphenyl ether	ug/kg	<55.7	330	55.7	01/25/18 20:19	
4-Chloro-3-methylphenol	ug/kg	<45.8	330	45.8	01/25/18 20:19	
4-Chloroaniline	ug/kg	<92.5	330	92.5	01/25/18 20:19	
4-Chlorophenylphenyl ether	ug/kg	<45.2	330	45.2	01/25/18 20:19	
4-Nitroaniline	ug/kg	<58.9	330	58.9	01/25/18 20:19	
4-Nitrophenol	ug/kg	<95.4	330	95.4	01/25/18 20:19	
Acenaphthene	ug/kg	<54.1	330	54.1	01/25/18 20:19	
Acenaphthylene	ug/kg	<45.3	330	45.3	01/25/18 20:19	
Anthracene	ug/kg	<47.6	330	47.6	01/25/18 20:19	
Benzo(a)anthracene	ug/kg	<38.4	330	38.4	01/25/18 20:19	
Benzo(a)pyrene	ug/kg	<37.4	330	37.4	01/25/18 20:19	
Benzo(b)fluoranthene	ug/kg	<40.0	330	40.0	01/25/18 20:19	
Benzo(g,h,i)perylene	ug/kg	<28.6	330	28.6	01/25/18 20:19	
Benzo(k)fluoranthene	ug/kg	<40.0	330	40.0	01/25/18 20:19	
bis(2-Chloroethoxy)methane	ug/kg	<64.1	330	64.1	01/25/18 20:19	
bis(2-Chloroethyl) ether	ug/kg	<72.4	330	72.4	01/25/18 20:19	
bis(2-Chloroisopropyl) ether	ug/kg	<76.7	330	76.7	01/25/18 20:19	
bis(2-Ethylhexyl)phthalate	ug/kg	<84.5	330	84.5	01/25/18 20:19	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

METHOD BLANK: 2820379 Matrix: Solid
Associated Lab Samples: 10417800001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	<73.2	330	73.2	01/25/18 20:19	
Carbazole	ug/kg	<44.4	330	44.4	01/25/18 20:19	
Chrysene	ug/kg	<33.2	330	33.2	01/25/18 20:19	
Di-n-butylphthalate	ug/kg	<45.2	330	45.2	01/25/18 20:19	
Di-n-octylphthalate	ug/kg	<101	330	101	01/25/18 20:19	
Dibenz(a,h)anthracene	ug/kg	<34.1	330	34.1	01/25/18 20:19	
Dibenzofuran	ug/kg	<48.0	330	48.0	01/25/18 20:19	
Diethylphthalate	ug/kg	<39.2	330	39.2	01/25/18 20:19	
Dimethylphthalate	ug/kg	<50.9	330	50.9	01/25/18 20:19	
Fluoranthene	ug/kg	<35.3	330	35.3	01/25/18 20:19	
Fluorene	ug/kg	<46.1	330	46.1	01/25/18 20:19	
Hexachloro-1,3-butadiene	ug/kg	<76.2	330	76.2	01/25/18 20:19	
Hexachlorobenzene	ug/kg	<42.7	330	42.7	01/25/18 20:19	
Hexachloroethane	ug/kg	<67.6	330	67.6	01/25/18 20:19	
Indeno(1,2,3-cd)pyrene	ug/kg	<38.5	330	38.5	01/25/18 20:19	
Isophorone	ug/kg	<75.8	330	75.8	01/25/18 20:19	
N-Nitroso-di-n-propylamine	ug/kg	<101	330	101	01/25/18 20:19	
N-Nitrosodimethylamine	ug/kg	<86.5	330	86.5	01/25/18 20:19	
N-Nitrosodiphenylamine	ug/kg	<40.6	330	40.6	01/25/18 20:19	
Naphthalene	ug/kg	<62.9	330	62.9	01/25/18 20:19	
Nitrobenzene	ug/kg	<66.4	330	66.4	01/25/18 20:19	
Pentachlorophenol	ug/kg	<97.6	670	97.6	01/25/18 20:19	
Phenanthrene	ug/kg	<45.3	330	45.3	01/25/18 20:19	
Phenol	ug/kg	<63.9	330	63.9	01/25/18 20:19	
Pyrene	ug/kg	<34.8	330	34.8	01/25/18 20:19	
2,4,6-Tribromophenol (S)	%.	87	38-125		01/25/18 20:19	
2-Fluorobiphenyl (S)	%.	61	39-125		01/25/18 20:19	
2-Fluorophenol (S)	%.	60	31-125		01/25/18 20:19	
Nitrobenzene-d5 (S)	%.	61	34-125		01/25/18 20:19	
p-Terphenyl-d14 (S)	%.	95	52-125		01/25/18 20:19	
Phenol-d6 (S)	%.	59	39-125		01/25/18 20:19	

LABORATORY CONTROL SAMPLE: 2820380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1070	64	44-125	
1,2-Dichlorobenzene	ug/kg	1670	1050	63	41-125	
1,2-Diphenylhydrazine	ug/kg	1670	1410	84	68-125	
1,3-Dichlorobenzene	ug/kg	1670	1030	62	38-125	
1,4-Dichlorobenzene	ug/kg	1670	1030	62	39-125	
1-Methylnaphthalene	ug/kg	1670	1170	70	56-125	
2,4,5-Trichlorophenol	ug/kg	1670	1350	81	66-125	
2,4,6-Trichlorophenol	ug/kg	1670	1340	81	66-125	
2,4-Dichlorophenol	ug/kg	1670	1210	73	60-125	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

LABORATORY CONTROL SAMPLE: 2820380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dimethylphenol	ug/kg	1670	1180	71	48-125	
2,4-Dinitrophenol	ug/kg	1670	1150	69	30-125	
2,4-Dinitrotoluene	ug/kg	1670	1370	82	70-125	
2,6-Dinitrotoluene	ug/kg	1670	1360	81	67-125	
2-Chloronaphthalene	ug/kg	1670	1280	77	60-125	
2-Chlorophenol	ug/kg	1670	1050	63	47-125	
2-Methylnaphthalene	ug/kg	1670	1180	71	55-125	
2-Methylphenol(o-Cresol)	ug/kg	1670	1140	69	54-125	
2-Nitroaniline	ug/kg	1670	1440	87	67-125	
2-Nitrophenol	ug/kg	1670	1100	66	49-125	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1220	73	56-125	
3,3'-Dichlorobenzidine	ug/kg	1670	1260	75	39-125	
3-Nitroaniline	ug/kg	1670	1210	73	47-125	
4,6-Dinitro-2-methylphenol	ug/kg	1670	1350J	81	30-125	
4-Bromophenylphenyl ether	ug/kg	1670	1390	83	67-125	
4-Chloro-3-methylphenol	ug/kg	1670	1330	80	68-125	
4-Chloroaniline	ug/kg	1670	880	53	30-125	
4-Chlorophenylphenyl ether	ug/kg	1670	1340	80	66-125	
4-Nitroaniline	ug/kg	1670	1290	77	63-125	
4-Nitrophenol	ug/kg	1670	1410	85	59-125	
Acenaphthene	ug/kg	1670	1290	78	64-125	
Acenaphthylene	ug/kg	1670	1300	78	64-125	
Anthracene	ug/kg	1670	1390	83	69-125	
Benzo(a)anthracene	ug/kg	1670	1380	83	70-125	
Benzo(a)pyrene	ug/kg	1670	1350	81	70-125	
Benzo(b)fluoranthene	ug/kg	1670	1410	84	70-125	
Benzo(g,h,i)perylene	ug/kg	1670	1380	83	70-125	
Benzo(k)fluoranthene	ug/kg	1670	1330	80	69-125	
bis(2-Chloroethoxy)methane	ug/kg	1670	1150	69	52-125	
bis(2-Chloroethyl) ether	ug/kg	1670	1070	64	41-125	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1100	66	36-125	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1430	86	71-125	
Butylbenzylphthalate	ug/kg	1670	1410	84	70-125	
Carbazole	ug/kg	1670	1400	84	70-125	
Chrysene	ug/kg	1670	1490	90	70-125	
Di-n-butylphthalate	ug/kg	1670	1420	85	73-125	
Di-n-octylphthalate	ug/kg	1670	1400	84	70-125	
Dibenz(a,h)anthracene	ug/kg	1670	1380	83	70-125	
Dibenzofuran	ug/kg	1670	1340	80	67-125	
Diethylphthalate	ug/kg	1670	1360	82	71-125	
Dimethylphthalate	ug/kg	1670	1350	81	69-125	
Fluoranthene	ug/kg	1670	1380	83	70-125	
Fluorene	ug/kg	1670	1350	81	68-125	
Hexachloro-1,3-butadiene	ug/kg	1670	1040	63	39-125	
Hexachlorobenzene	ug/kg	1670	1380	83	68-125	
Hexachloroethane	ug/kg	1670	1030	62	38-125	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1360	81	70-125	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

LABORATORY CONTROL SAMPLE: 2820380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	1670	1190	71	57-125	
N-Nitroso-di-n-propylamine	ug/kg	1670	1150	69	54-125	
N-Nitrosodimethylamine	ug/kg	1670	1060	64	36-125	
N-Nitrosodiphenylamine	ug/kg	1670	1390	83	68-125	
Naphthalene	ug/kg	1670	1080	65	48-125	
Nitrobenzene	ug/kg	1670	1110	66	47-125	
Pentachlorophenol	ug/kg	1670	1440	86	37-125	
Phenanthrene	ug/kg	1670	1370	82	69-125	
Phenol	ug/kg	1670	1140	68	51-125	
Pyrene	ug/kg	1670	1430	86	70-125	
2,4,6-Tribromophenol (S)	%.			88	38-125	
2-Fluorobiphenyl (S)	%.			81	39-125	
2-Fluorophenol (S)	%.			69	31-125	
Nitrobenzene-d5 (S)	%.			70	34-125	
p-Terphenyl-d14 (S)	%.			89	52-125	
Phenol-d6 (S)	%.			73	39-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820381 2820382

Parameter	Units	10417800001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	<82.0	2140	2130	1270	1250	60	59	47-125	2	30	
1,2-Dichlorobenzene	ug/kg	<79.9	2140	2130	1090	1160	51	54	38-125	6	30	
1,2-Diphenylhydrazine	ug/kg	<76.4	2140	2130	1820	1470	85	69	64-125	21	30	
1,3-Dichlorobenzene	ug/kg	<78.8	2140	2130	1080	1170	51	55	34-125	7	30	
1,4-Dichlorobenzene	ug/kg	<77.0	2140	2130	1090	1190	51	56	35-125	8	30	
1-Methylnaphthalene	ug/kg	<66.4	2140	2130	1570	1540	73	72	57-125	2	30	
2,4,5-Trichlorophenol	ug/kg	<82.5	2140	2130	1910	1930	89	91	62-125	1	30	
2,4,6-Trichlorophenol	ug/kg	<60.0	2140	2130	1930	1940	90	91	63-125	1	30	
2,4-Dichlorophenol	ug/kg	<79.7	2140	2130	1660	1620	78	76	63-125	3	30	
2,4-Dimethylphenol	ug/kg	<159	2140	2130	1530	1420	72	67	54-125	8	30	
2,4-Dinitrophenol	ug/kg	<95.1	2140	2130	448	<94.9	21	0	30-125		30	M1
2,4-Dinitrotoluene	ug/kg	<57.2	2140	2130	1730	324J	81	15	56-125		30	M1
2,6-Dinitrotoluene	ug/kg	<59.0	2140	2130	1790	434	84	20	62-125	122	30	M1,R1
2-Chloronaphthalene	ug/kg	<60.0	2140	2130	1690	1660	79	78	61-125	2	30	
2-Chlorophenol	ug/kg	<84.1	2140	2130	1180	1190	55	56	48-125	1	30	
2-Methylnaphthalene	ug/kg	<65.5	2140	2130	1560	1540	73	72	58-125	1	30	
2-Methylphenol(o-Cresol)	ug/kg	<106	2140	2130	1430	1410	67	66	56-125	1	30	
2-Nitroaniline	ug/kg	<93.4	2140	2130	1950	917	91	43	66-125	72	30	M1,R1
2-Nitrophenol	ug/kg	<79.6	2140	2130	1170	282J	55	13	38-125		30	M1
3&4-Methylphenol(m&p Cresol)	ug/kg	<95.3	2140	2130	1560	1500	73	71	58-125	4	30	
3,3'-Dichlorobenzidine	ug/kg	<101	2140	2130	2620	2270	123	107	30-139	14	30	
3-Nitroaniline	ug/kg	<104	2140	2130	2330	1050	109	49	37-125	76	30	R1
4,6-Dinitro-2-methylphenol	ug/kg	<170	2140	2130	411J	<170	19	0	30-125		30	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820381 2820382

Parameter	Units	10417800001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromophenylphenyl ether	ug/kg	<71.3	2140	2130	1920	1980	90	93	67-125	3	30	
4-Chloro-3-methylphenol	ug/kg	<58.6	2140	2130	1820	1870	85	88	66-125	2	30	
4-Chloroaniline	ug/kg	<118	2140	2130	1540	1850	72	87	30-125	18	30	
4-Chlorophenylphenyl ether	ug/kg	<57.8	2140	2130	1850	1850	87	87	65-125	0	30	
4-Nitroaniline	ug/kg	<75.4	2140	2130	1980	824	93	39	54-125	83	30	M1,R1
4-Nitrophenol	ug/kg	<122	2140	2130	2000	629	94	30	49-125	104	30	M1,R1
Acenaphthene	ug/kg	<69.2	2140	2130	1760	1730	82	81	60-125	1	30	
Acenaphthylene	ug/kg	<58.0	2140	2130	1780	1760	83	83	64-125	1	30	
Anthracene	ug/kg	<60.9	2140	2130	1870	1950	87	91	61-125	4	30	
Benzo(a)anthracene	ug/kg	<49.1	2140	2130	1880	1920	88	90	65-125	2	30	
Benzo(a)pyrene	ug/kg	<47.9	2140	2130	1840	1930	86	91	55-125	5	30	
Benzo(b)fluoranthene	ug/kg	<51.2	2140	2130	1850	1890	87	89	64-125	2	30	
Benzo(g,h,i)perylene	ug/kg	<36.6	2140	2130	1970	1940	92	91	63-125	2	30	
Benzo(k)fluoranthene	ug/kg	<51.2	2140	2130	1830	2030	86	95	63-125	10	30	
bis(2-Chloroethoxy)methane	ug/kg	<82.0	2140	2130	1450	1400	68	66	58-125	4	30	
bis(2-Chloroethyl) ether	ug/kg	<92.7	2140	2130	1060	1160	50	55	41-125	9	30	
bis(2-Chloroisopropyl) ether	ug/kg	<98.2	2140	2130	1050	1140	49	54	40-125	9	30	
bis(2-Ethylhexyl)phthalate	ug/kg	<108	2140	2130	1930	2020	91	95	71-125	4	30	
Butylbenzylphthalate	ug/kg	<93.7	2140	2130	1910	1990	89	93	70-125	4	30	
Carbazole	ug/kg	<56.8	2140	2130	1880	1990	88	93	66-125	6	30	
Chrysene	ug/kg	<42.5	2140	2130	2040	1970	95	92	64-125	3	30	
Di-n-butylphthalate	ug/kg	<57.8	2140	2130	1910	1990	89	94	70-125	4	30	
Di-n-octylphthalate	ug/kg	<129	2140	2130	1950	2040	91	96	69-125	4	30	
Dibenz(a,h)anthracene	ug/kg	<43.6	2140	2130	1950	1990	91	94	61-125	2	30	
Dibenzofuran	ug/kg	<61.4	2140	2130	1790	1850	84	87	64-125	3	30	
Diethylphthalate	ug/kg	<50.2	2140	2130	1890	1920	89	90	66-125	1	30	
Dimethylphthalate	ug/kg	<65.1	2140	2130	1870	1910	88	90	66-125	2	30	
Fluoranthene	ug/kg	<45.2	2140	2130	1840	1940	86	91	65-125	6	30	
Fluorene	ug/kg	<59.0	2140	2130	1800	1870	84	88	64-125	3	30	
Hexachloro-1,3-butadiene	ug/kg	<97.5	2140	2130	1210	1120	57	52	43-125	8	30	
Hexachlorobenzene	ug/kg	<54.6	2140	2130	1860	1900	87	89	62-125	2	30	
Hexachloroethane	ug/kg	<86.5	2140	2130	911	470	43	22	30-125	64	30	M1,R1
Indeno(1,2,3-cd)pyrene	ug/kg	<49.3	2140	2130	1970	1950	92	92	63-125	1	30	
Isophorone	ug/kg	<97.0	2140	2130	1550	1530	73	72	60-125	2	30	
N-Nitroso-di-n-propylamine	ug/kg	<129	2140	2130	1340	1380	63	65	53-125	3	30	
N-Nitrosodimethylamine	ug/kg	<111	2140	2130	1070	1200	50	56	35-125	12	30	
N-Nitrosodiphenylamine	ug/kg	<52.0	2140	2130	1870	1940	88	91	64-125	4	30	
Naphthalene	ug/kg	<80.5	2140	2130	1300	1290	61	61	52-125	0	30	
Nitrobenzene	ug/kg	<85.0	2140	2130	1240	903	58	42	51-125	32	30	M1,R1
Pentachlorophenol	ug/kg	<125	2140	2130	2070	1950	97	92	37-125	6	30	
Phenanthrene	ug/kg	<58.0	2140	2130	1840	1930	86	91	63-125	5	30	
Phenol	ug/kg	<81.8	2140	2130	1340	1310	63	62	54-125	2	30	
Pyrene	ug/kg	<44.5	2140	2130	1870	2010	88	94	67-125	7	30	
2,4,6-Tribromophenol (S)	%.						98	93	38-125			
2-Fluorobiphenyl (S)	%.						86	79	39-125			
2-Fluorophenol (S)	%.						56	58	31-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820381 2820382

Parameter	Units	10417800001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrobenzene-d5 (S)	%.						63	44	34-125			
p-Terphenyl-d14 (S)	%.						95	95	52-125			
Phenol-d6 (S)	%.						66	62	39-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 UPRR_Freeman Cenex Harves
Pace Project No.:	10417800

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman Cenex Harves
Pace Project No.: 10417800

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10417800001	**PSG/CC-WC-011818**	EPA 3050	519051	EPA 6010C	519139
10417800001	**PSG/CC-WC-011818**	EPA 7471B	519065	EPA 7471B	519165
10417800001	**PSG/CC-WC-011818**	ASTM D2974	519085		
10417800001	**PSG/CC-WC-011818**	EPA 3550	519322	EPA 8270D	519488
10417800001	**PSG/CC-WC-011818**	EPA 5035/5030B	519727	EPA 8260B	519839
10417800002	**Trip Blank**	EPA 5035/5030B	519727	EPA 8260B	519839

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10417800

Page: 1 of 1

1750888

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	CHZM	Report To:	David Hobson / CHZM	Attention:	Anne Theriault
Address:	999 W. Riverside Ave #500	Copy To:	Steve Demus / CHZM	Company Name:	UPRR
	Spokane, WA 99204			Address:	1400 W. 52nd Ave, Denver, CO 80221
Email To:	Steve.demus@ch2m.com	Purchase Order No.:		Pace Quote Reference:	Contract # 758938
Phone:	509-944-1785	Project Name:	UPRR Freeman Corner Harvest	Pace Project Manager:	Jennifer Gross
Fax:					
Requested Due Date/TAT:	5 day TAT	Project Number:	1497	Pace Profile #:	36447/4

REGULATORY AGENCY

- ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☐ OTHER ______

Site Location: Freeman
STATE: WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

MATRIX CODE (see valid codes to left); SAMPLE TYPE (G=GRAB C=COMP)

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED COMPOSITE START DATE (2018)	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	VOCs 8260	Dry Weight	RCRA 8 Metals 6010	RCRA Hg 7471	SVOCs 8270	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PSG/CC-WC-011818	SL	C	1/18	1200	—	—	—	4	X						X			X	X	X	X	X		001
2	Trip Blank	—	—	—	—	—	—	—	2							X			X						002
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] / CH2M	1/19/18	1500	[signature] Pace	1/20/18	9:30	1.5	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 1/18/18

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M

Project #:

WO# : 10417800

10417800

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2440

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.7 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** 1-20-18 TD

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Steve Demus Date/Time: 01/24/18

Comments/Resolution: ok to analyze trichloroethene and 1122-trichloroethane without Nelac/TNI certs.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time: 10:05	put in cooler 1.7	1.5
Time: 10:09	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/22/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

January 30, 2018

David Hodson
CH2M Hill
9451 Atkinson St
Suite 100
Roseville, CA 95747

RE: Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 24, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10418080

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10418080001	**Freeman-WC-012318**	Solid	01/23/18 10:30	01/24/18 10:30

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SAMPLE ANALYTE COUNT

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10418080001	**Freeman-WC-012318**	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	AJK	2	PASI-M
		EPA 6010C	IP	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M

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SUMMARY OF DETECTION

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10418080001	**Freeman-WC-012318**					
NWTPH-Dx	Diesel Fuel Range	15.0J	mg/kg	18.1	01/25/18 19:07	R1
NWTPH-Dx	Motor Oil Range	33.6	mg/kg	12.1	01/25/18 19:07	M1,R1
EPA 6010C	Arsenic	2.8	mg/kg	1.2	01/25/18 12:41	
EPA 6010C	Barium	131	mg/kg	0.58	01/25/18 12:41	
EPA 6010C	Cadmium	0.089J	mg/kg	0.17	01/25/18 12:41	
EPA 6010C	Chromium	9.4	mg/kg	0.58	01/25/18 12:41	
EPA 6010C	Copper	11.6	mg/kg	0.58	01/25/18 12:41	
EPA 6010C	Lead	10.8	mg/kg	0.58	01/25/18 12:41	
EPA 6010C	Zinc	33.8	mg/kg	1.2	01/25/18 12:41	
ASTM D2974	Percent Moisture	17.3	%	0.10	01/25/18 10:41	

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS
Client: UPRR_CH2M Hill
Date: January 30, 2018

General Information:
1 sample was analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3550 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 519595

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10418080001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2821588)
  - Motor Oil Range

R1: RPD value was outside control limits.

- MSD (Lab ID: 2821588)
  - Diesel Fuel Range
  - Motor Oil Range

Additional Comments:

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1700 Elm Street - Suite 200
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(612)607-1700

PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Method: **NWTPH-Gx**
Description: NWTPH-Gx GCV
Client: UPRR_CH2M Hill
Date: January 30, 2018

General Information:
1 sample was analyzed for NWTPH-Gx. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with NWTPH-Gx with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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(612)607-1700

PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: UPRR_CH2M Hill
Date: January 30, 2018

General Information:
1 sample was analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Method: **EPA 7471B**
Description: 7471B Mercury
Client: UPRR_CH2M Hill
Date: January 30, 2018

General Information:
1 sample was analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease

Pace Project No.: 10418080

Sample: Freeman-WC-012318 **Lab ID: 10418080001** Collected: 01/23/18 10:30 Received: 01/24/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550								
Diesel Fuel Range	**15.0J**	mg/kg	18.1	2.6	1	01/24/18 15:25	01/25/18 19:07	68334-30-5	R1
Motor Oil Range	**33.6**	mg/kg	12.1	3.1	1	01/24/18 15:25	01/25/18 19:07		M1,R1
Surrogates									
n-Triacontane (S)	91	%.	50-150		1	01/24/18 15:25	01/25/18 19:07	638-68-6	
o-Terphenyl (S)	85	%.	50-150		1	01/24/18 15:25	01/25/18 19:07	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
TPH as Gas	**<1.9**	mg/kg	7.3	1.9	1	01/29/18 12:33	01/29/18 20:21		
Surrogates									
a,a,a-Trifluorotoluene (S)	77	%.	50-150		1	01/29/18 12:33	01/29/18 20:21	98-08-8	
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050								
Arsenic	**2.8**	mg/kg	1.2	0.30	1	01/25/18 04:23	01/25/18 12:41	7440-38-2	
Barium	**131**	mg/kg	0.58	0.031	1	01/25/18 04:23	01/25/18 12:41	7440-39-3	
Cadmium	**0.089J**	mg/kg	0.17	0.018	1	01/25/18 04:23	01/25/18 12:41	7440-43-9	
Chromium	**9.4**	mg/kg	0.58	0.073	1	01/25/18 04:23	01/25/18 12:41	7440-47-3	
Copper	**11.6**	mg/kg	0.58	0.096	1	01/25/18 04:23	01/25/18 12:41	7440-50-8	
Lead	**10.8**	mg/kg	0.58	0.13	1	01/25/18 04:23	01/25/18 12:41	7439-92-1	
Selenium	**<0.48**	mg/kg	1.2	0.48	1	01/25/18 04:23	01/25/18 12:41	7782-49-2	
Silver	**<0.045**	mg/kg	0.58	0.045	1	01/25/18 04:23	01/25/18 12:41	7440-22-4	
Zinc	**33.8**	mg/kg	1.2	0.33	1	01/25/18 04:23	01/25/18 12:41	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.011**	mg/kg	0.023	0.011	1	01/25/18 04:25	01/25/18 15:22	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.3**	%	0.10	0.10	1		01/25/18 10:41		

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

QC Batch: 520199 | Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx | Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 10418080001

METHOD BLANK: 2824854 | Matrix: Solid
Associated Lab Samples: 10418080001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	mg/kg	<1.3	5.0	1.3	01/29/18 20:55	
a,a,a-Trifluorotoluene (S)	%.	81	50-150		01/29/18 20:55	

LABORATORY CONTROL SAMPLE & LCSD: 2824856 2824857

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	mg/kg	50	49.3	50.4	99	101	54-125	2	20	
a,a,a-Trifluorotoluene (S)	%.				105	95	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

QC Batch:	519631	Analysis Method:	EPA 7471B
QC Batch Method:	EPA 7471B	Analysis Description:	7471B Mercury Solids
Associated Lab Samples:	10418080001		

METHOD BLANK: 2821939 Matrix: Solid
Associated Lab Samples: 10418080001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0087	0.019	0.0087	01/25/18 15:17	

LABORATORY CONTROL SAMPLE: 2821940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.43	0.42	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821941 2821942

Parameter	Units	10418130001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.51	.54	0.50	0.53	99	99	75-125	6	20	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

QC Batch: 519628 — Analysis Method: EPA 6010C
QC Batch Method: EPA 3050 — Analysis Description: 6010C Solids
Associated Lab Samples: 10418080001

METHOD BLANK: 2821927 — Matrix: Solid
Associated Lab Samples: 10418080001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.25	0.98	0.25	01/25/18 12:33	
Barium	mg/kg	<0.026	0.49	0.026	01/25/18 12:33	
Cadmium	mg/kg	<0.015	0.15	0.015	01/25/18 12:33	
Chromium	mg/kg	<0.062	0.49	0.062	01/25/18 12:33	
Copper	mg/kg	0.30J	0.49	0.082	01/25/18 12:33	
Lead	mg/kg	<0.11	0.49	0.11	01/25/18 12:33	
Selenium	mg/kg	<0.41	0.98	0.41	01/25/18 12:33	
Silver	mg/kg	<0.038	0.49	0.038	01/25/18 12:33	
Zinc	mg/kg	<0.29	0.98	0.29	01/25/18 12:33	

LABORATORY CONTROL SAMPLE: 2821928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.2	98	80-120	
Barium	mg/kg	50	48.7	97	80-120	
Cadmium	mg/kg	50	48.3	97	80-120	
Chromium	mg/kg	50	50.1	100	80-120	
Copper	mg/kg	50	47.2	94	80-120	
Lead	mg/kg	50	50.1	100	80-120	
Selenium	mg/kg	50	48.9	98	80-120	
Silver	mg/kg	25	23.3	93	80-120	
Zinc	mg/kg	50	49.8	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821929 — 2821930

Parameter	Units	10418130001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	ND	51.2	53.7	50.5	52.6	97	96	75-125	4	20	
Barium	mg/kg	27.8	51.2	53.7	80.1	80.6	102	98	75-125	1	20	
Cadmium	mg/kg	ND	51.2	53.7	49.0	51.2	96	95	75-125	5	20	
Chromium	mg/kg	3.7	51.2	53.7	54.8	57.0	100	99	75-125	4	20	
Copper	mg/kg	1.3	51.2	53.7	50.4	52.2	96	95	75-125	4	20	
Lead	mg/kg	2.2	51.2	53.7	52.1	54.3	98	97	75-125	4	20	
Selenium	mg/kg	ND	51.2	53.7	49.3	51.5	96	96	75-125	4	20	
Silver	mg/kg	ND	25.6	26.9	23.9	24.9	94	93	75-125	4	20	
Zinc	mg/kg	7.0	51.2	53.7	57.9	60.1	100	99	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

QC Batch: 519683 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10418080001

SAMPLE DUPLICATE: 2822079

Parameter	Units	10418080001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	17.6	2	30	

SAMPLE DUPLICATE: 2822260

Parameter	Units	10418142001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.9	4.7	3	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

QC Batch: 519595 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3550 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 10418080001

METHOD BLANK: 2821585 Matrix: Solid
Associated Lab Samples: 10418080001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/kg	<2.2	15.0	2.2	01/25/18 18:44	
Motor Oil Range	mg/kg	<2.6	10.0	2.6	01/25/18 18:44	
n-Triacontane (S)	%.	85	50-150		01/25/18 18:44	
o-Terphenyl (S)	%.	81	50-150		01/25/18 18:44	

LABORATORY CONTROL SAMPLE: 2821586

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range	mg/kg	50	41.9	84	50-150	
Motor Oil Range	mg/kg	50	51.0	102	50-150	
n-Triacontane (S)	%.			94	50-150	
o-Terphenyl (S)	%.			87	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821587 2821588

Parameter	Units	10418080001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Fuel Range	mg/kg	15.0J	60.1	60.2	53.6	82.2	64	112	50-150	42	30	R1
Motor Oil Range	mg/kg	33.6	60.1	60.2	77.4	177	73	239	50-150	78	30	M1,R1
n-Triacontane (S)	%.						93	86	50-150			
o-Terphenyl (S)	%.						82	80	50-150			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10418080

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10418080

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10418080001	**Freeman-WC-012318**	EPA 3550	519595	NWTPH-Dx	519860
10418080001	**Freeman-WC-012318**	NWTPH-Gx	520199	NWTPH-Gx	520295
10418080001	**Freeman-WC-012318**	EPA 3050	519628	EPA 6010C	519687
10418080001	**Freeman-WC-012318**	EPA 7471B	519631	EPA 7471B	519781
10418080001	**Freeman-WC-012318**	ASTM D2974	519683		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10418080

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: UPRR	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault (atheria@up.com)
Address: 1400 W. 52nd Ave.	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Denver, CO 80221	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email: atheria@up.com	Purchase Order #	Pace Quote: Contract# 758938
Phone: Fax	Project Name: Freeman, WA - Cenex Harvest Lease	Pace Project Manager: Jennifer Gross
Requested Due Date: 24 Hr / 3 Day / 10 Day LKB	Project #:	Pace Profile #: 36447 / 4

Regulatory Agency

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other Methanol	Analyses Test Y/N	Low Level VOCs by 8260	6020 Total Iron	6020 Dissolved Iron (Field Filtered) Y	SM4500P-E Total Phosphorus	TPH-DRO	TPH-GRO	RCRA 8 Metals Cu, Zn	Dry Weight						
1	Freeman-WC-012318	SL	G	1/23/18			1030		5	X					X						X	X	X	X						001
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Field filtered by client	LKB / CH2M	1/23/18	1420	pace	1/24/18	10:30	3.6	Y	N	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L.K. Baumann

SIGNATURE of SAMPLER: LKBaumann

DATE Signed: 1/23/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #:

WO# : 10418080

10418080

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9636 4371

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.8 **Cooler Temp Corrected (°C):** 3.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** 1/24/18 ZD

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☑ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☑ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		9.
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☑ No		12. the vials don't have id/time/date on them
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 12:30	Temp: 3.8	Corrected Temp: 3.6
Time:	put in cooler	
Time: 12:36	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 01/24/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 16, 2018

Reuben Greer
CH2M Hill
717 W. Sprague Avenue
Suite 800
Spokane, WA 99201

RE: Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Dear Reuben Greer:

Enclosed are the analytical results for sample(s) received by the laboratory on January 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on February 16, 2018 to change all sample IDs starting with SV to SB, per client request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

CERTIFICATIONS

Project:	1497 FREEMAN UPRR-Revised Report
Pace Project No.:	10418534

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10418534001	**Trip Blank**	Solid	01/23/18 08:00	01/27/18 10:15
10418534002	**SB101B-5**	Solid	01/23/18 10:40	01/27/18 10:15
10418534003	**SB101B-15**	Solid	01/23/18 10:55	01/27/18 10:15
10418534004	**SB101B-25**	Solid	01/23/18 11:35	01/27/18 10:15
10418534005	**SB101B-36**	Solid	01/23/18 12:25	01/27/18 10:15
10418534006	**SB102B-5**	Solid	01/24/18 12:25	01/27/18 10:15
10418534007	**SB102B-15**	Solid	01/24/18 12:30	01/27/18 10:15
10418534008	**SB102B-25**	Solid	01/24/18 12:35	01/27/18 10:15
10418534009	**SB102B-30**	Solid	01/24/18 12:40	01/27/18 10:15
10418534010	**SB103B-5**	Solid	01/25/18 09:25	01/27/18 10:15
10418534011	**SB103B-15**	Solid	01/25/18 09:55	01/27/18 10:15
10418534012	**SB103B-22**	Solid	01/25/18 10:00	01/27/18 10:15
10418534013	**SB103B-27**	Solid	01/25/18 10:30	01/27/18 10:15
10418534014	**SB103B-27-FD**	Solid	01/25/18 10:40	01/27/18 10:15
10418534015	**SB104B-5**	Solid	01/25/18 11:20	01/27/18 10:15
10418534016	**SB104B-15**	Solid	01/25/18 12:00	01/27/18 10:15
10418534017	**SB104B-22**	Solid	01/25/18 12:25	01/27/18 10:15
10418534018	**SB104B-27**	Solid	01/25/18 12:30	01/27/18 10:15
10418534019	**WC-012518**	Solid	01/25/18 17:00	01/27/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10418534001	**Trip Blank**	EPA 8260B	CD2	51	PASI-M
10418534002	**SB101B-5**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534003	**SB101B-15**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534004	**SB101B-25**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534005	**SB101B-36**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534006	**SB102B-5**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534007	**SB102B-15**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534008	**SB102B-25**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534009	**SB102B-30**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534010	**SB103B-5**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534011	**SB103B-15**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534012	**SB103B-22**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534013	**SB103B-27**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534014	**SB103B-27-FD**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534015	**SB104B-5**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534016	**SB104B-15**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534017	**SB104B-22**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534018	**SB104B-27**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10418534019	**WC-012518**	EPA 6010C	DM	7	PASI-M
		EPA 7471B	LMW	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D	AT1	72	PASI-M
		EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10418534002	**SB101B-5**					
ASTM D2974	Percent Moisture	19.3	%	0.10	01/29/18 08:52	
10418534003	**SB101B-15**					
ASTM D2974	Percent Moisture	15.1	%	0.10	01/29/18 08:53	
EPA 8260B	Chloroform	4.9	ug/kg	3.7	01/29/18 16:32	
10418534004	**SB101B-25**					
ASTM D2974	Percent Moisture	31.9	%	0.10	01/29/18 08:53	
EPA 8260B	Carbon tetrachloride	4.2J	ug/kg	5.1	02/06/18 17:29	
EPA 8260B	Chloroform	5.5	ug/kg	5.1	02/06/18 17:29	
10418534005	**SB101B-36**					
ASTM D2974	Percent Moisture	34.1	%	0.10	01/29/18 08:53	
EPA 8260B	Carbon tetrachloride	20.6	ug/kg	5.8	01/29/18 17:09	
EPA 8260B	Chloroform	9.4	ug/kg	5.8	01/29/18 17:09	
10418534006	**SB102B-5**					
ASTM D2974	Percent Moisture	14.3	%	0.10	01/29/18 08:53	
EPA 8260B	1,2,4-Trimethylbenzene	0.26J	ug/kg	3.8	02/06/18 17:48	
EPA 8260B	2-Butanone (MEK)	5.4J	ug/kg	19.1	02/06/18 17:48	
EPA 8260B	Carbon tetrachloride	5.7	ug/kg	3.8	02/06/18 17:48	
EPA 8260B	Chloroform	8.7	ug/kg	3.8	02/06/18 17:48	
10418534007	**SB102B-15**					
ASTM D2974	Percent Moisture	33.2	%	0.10	01/29/18 08:53	
EPA 8260B	Carbon tetrachloride	8.7	ug/kg	5.9	01/29/18 17:46	
EPA 8260B	Chloroform	10.6	ug/kg	5.9	01/29/18 17:46	
10418534008	**SB102B-25**					
ASTM D2974	Percent Moisture	34.4	%	0.10	01/29/18 08:53	
EPA 8260B	Carbon tetrachloride	7.6	ug/kg	5.3	01/29/18 18:05	
EPA 8260B	Chloroform	8.4	ug/kg	5.3	01/29/18 18:05	
10418534009	**SB102B-30**					
ASTM D2974	Percent Moisture	35.8	%	0.10	01/29/18 08:54	
EPA 8260B	Carbon tetrachloride	10.7	ug/kg	5.6	02/06/18 18:07	
EPA 8260B	Chloroform	10.2	ug/kg	5.6	02/06/18 18:07	
10418534010	**SB103B-5**					
ASTM D2974	Percent Moisture	15.6	%	0.10	01/29/18 08:54	
EPA 8260B	Carbon tetrachloride	2.8J	ug/kg	3.9	01/29/18 18:42	
EPA 8260B	Chloroform	6.1	ug/kg	3.9	01/29/18 18:42	
10418534011	**SB103B-15**					
ASTM D2974	Percent Moisture	31.5	%	0.10	01/29/18 08:55	
EPA 8260B	Carbon tetrachloride	4.0J	ug/kg	5.5	02/06/18 18:26	
EPA 8260B	Chloroform	4.0J	ug/kg	5.5	02/06/18 18:26	
10418534012	**SB103B-22**					
ASTM D2974	Percent Moisture	35.8	%	0.10	01/29/18 08:55	
EPA 8260B	Carbon tetrachloride	2.8J	ug/kg	5.4	01/29/18 19:19	

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SUMMARY OF DETECTION

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10418534012	**SB103B-22**					
EPA 8260B	Chloroform	1.8J	ug/kg	5.4	01/29/18 19:19	
10418534013	**SB103B-27**					
ASTM D2974	Percent Moisture	36.8	%	0.10	01/29/18 08:55	
EPA 8260B	1,2,4-Trimethylbenzene	0.60J	ug/kg	6.5	02/02/18 18:16	
EPA 8260B	Carbon tetrachloride	7.2	ug/kg	6.5	02/02/18 18:16	C0
EPA 8260B	Chloroform	3.8J	ug/kg	6.5	02/02/18 18:16	C0
10418534014	**SB103B-27-FD**					
ASTM D2974	Percent Moisture	37.2	%	0.10	01/29/18 08:55	
EPA 8260B	1,2,4-Trimethylbenzene	0.51J	ug/kg	5.7	02/02/18 18:35	
EPA 8260B	Carbon tetrachloride	10.6	ug/kg	5.7	02/02/18 18:35	C0
EPA 8260B	Chloroform	5.5J	ug/kg	5.7	02/02/18 18:35	C0
10418534015	**SB104B-5**					
ASTM D2974	Percent Moisture	17.4	%	0.10	01/29/18 08:55	
10418534016	**SB104B-15**					
ASTM D2974	Percent Moisture	34.5	%	0.10	01/29/18 08:56	
EPA 8260B	1,2,4-Trimethylbenzene	0.42J	ug/kg	5.7	02/02/18 19:13	B
EPA 8260B	Carbon tetrachloride	13.7	ug/kg	5.7	02/02/18 19:13	
EPA 8260B	Chloroform	5.1J	ug/kg	5.7	02/02/18 19:13	B
10418534017	**SB104B-22**					
ASTM D2974	Percent Moisture	30.9	%	0.10	01/29/18 08:56	
EPA 8260B	Carbon tetrachloride	4.5J	ug/kg	6.2	02/02/18 19:32	
EPA 8260B	Chloroform	4.1J	ug/kg	6.2	02/02/18 19:32	
10418534018	**SB104B-27**					
ASTM D2974	Percent Moisture	30.6	%	0.10	01/29/18 08:56	
EPA 8260B	Carbon tetrachloride	7.2	ug/kg	5.3	01/29/18 14:30	
EPA 8260B	Chloroform	3.6J	ug/kg	5.3	01/29/18 14:30	
10418534019	**WC-012518**					
EPA 6010C	Barium	406	mg/kg	3.6	01/29/18 15:26	P6
EPA 6010C	Chromium	10.1	mg/kg	3.6	01/29/18 15:26	
EPA 6010C	Lead	5.6	mg/kg	3.6	01/29/18 15:26	
EPA 7471B	Mercury	0.047	mg/kg	0.029	01/29/18 14:01	
ASTM D2974	Percent Moisture	31.9	%	0.10	01/29/18 08:56	
EPA 8260B	Toluene	23.2J	ug/kg	75.8	01/30/18 16:04	

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

General Information:
1 sample was analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 520097

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10418534019

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2824600)
  - Arsenic
  - Selenium
- MSD (Lab ID: 2824601)
  - Arsenic
  - Selenium

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MSD (Lab ID: 2824601)
  - Barium

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

Analyte Comments:

QC Batch: 520097

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- WC-012518 (Lab ID: 10418534019)
  - Silver
  - Arsenic
  - Cadmium
  - Selenium

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 7471B**
Description: 7471B Mercury
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

General Information:
1 sample was analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8270D**
Description: 8270D MSSV
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

General Information:
1 sample was analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3550 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

General Information:
18 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035 Low with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

QC Batch: 520269

IS: The internal standard response is below criteria. Results may be biased high.

- MS (Lab ID: 2825092)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 2825093)
  - Acetone
  - Tetrahydrofuran

QC Batch: 521106

IO: The internal standard response was outside the laboratory acceptance limits confirmed by reanalysis. The results reported are from the most QC compliant analysis.

- SB103B-27-FD (Lab ID: 10418534014)
  - Acetone
  - Tetrahydrofuran

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 521106

S0: Surrogate recovery outside laboratory control limits.

- SB103B-27 (Lab ID: 10418534013)
  - 1,2-Dichloroethane-d4 (S)

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

- SB103B-27-FD (Lab ID: 10418534014)
  - 1,2-Dichloroethane-d4 (S)

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 521106

B: Analyte was detected in the associated method blank.
- BLANK for HBN 521106 [MSV/4293 (Lab ID: 2829428)
  - 1,2,4-Trimethylbenzene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 520269

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10418534018

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2825092)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 2825093)
  - 1,1,2-Trichlorotrifluoroethane
  - 1,2,4-Trichlorobenzene
  - 1,2-Dibromoethane (EDB)
  - 1,3,5-Trimethylbenzene
  - 2-Hexanone
  - Acetone
  - Bromoform
  - Chlorobenzene
  - Dibromochloromethane
  - Ethylbenzene
  - Hexachloro-1,3-butadiene
  - Naphthalene
  - Styrene
  - Tetrachloroethene
  - Tetrahydrofuran
  - Toluene
  - Trichloroethene
  - Vinyl acetate
  - cis-1,3-Dichloropropene
  - trans-1,3-Dichloropropene

QC Batch: 521106

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

QC Batch: 521602

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 521106

C0: Result confirmed by second analysis.

- SB103B-27 (Lab ID: 10418534013)
  - Carbon tetrachloride
  - Chloroform
- SB103B-27-FD (Lab ID: 10418534014)
  - Carbon tetrachloride
  - Chloroform

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 520411

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2825618)
    - Acetone

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 16, 2018

Analyte Comments:

QC Batch: 520411

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2825617)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- DUP (Lab ID: 2825621)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- LCS (Lab ID: 2825618)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- LCSD (Lab ID: 2825619)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- MS (Lab ID: 2825620)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene
- WC-012518 (Lab ID: 10418534019)
  - 1,1,2,2-Tetrachloroethane
  - Trichloroethene

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: Trip Blank **Lab ID: 10418534001** Collected: 01/23/18 08:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.75**	ug/kg	4.0	0.75	1	01/29/18 12:00	01/29/18 14:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.54**	ug/kg	4.0	0.54	1	01/29/18 12:00	01/29/18 14:12	79-34-5	
1,1,2-Trichloroethane	**<0.69**	ug/kg	4.0	0.69	1	01/29/18 12:00	01/29/18 14:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.72**	ug/kg	4.0	0.72	1	01/29/18 12:00	01/29/18 14:12	76-13-1	
1,1-Dichloroethane	**<0.72**	ug/kg	4.0	0.72	1	01/29/18 12:00	01/29/18 14:12	75-34-3	
1,1-Dichloroethene	**<0.57**	ug/kg	4.0	0.57	1	01/29/18 12:00	01/29/18 14:12	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.0	1.6	1	01/29/18 12:00	01/29/18 14:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	4.0	0.19	1	01/29/18 12:00	01/29/18 14:12	95-63-6	
1,2-Dibromoethane (EDB)	**<0.78**	ug/kg	4.0	0.78	1	01/29/18 12:00	01/29/18 14:12	106-93-4	
1,2-Dichlorobenzene	**<0.63**	ug/kg	4.0	0.63	1	01/29/18 12:00	01/29/18 14:12	95-50-1	
1,2-Dichloroethane	**<0.71**	ug/kg	4.0	0.71	1	01/29/18 12:00	01/29/18 14:12	107-06-2	
1,3,5-Trimethylbenzene	**<0.48**	ug/kg	4.0	0.48	1	01/29/18 12:00	01/29/18 14:12	108-67-8	
1,3-Dichlorobenzene	**<0.52**	ug/kg	4.0	0.52	1	01/29/18 12:00	01/29/18 14:12	541-73-1	
1,4-Dichlorobenzene	**<0.58**	ug/kg	4.0	0.58	1	01/29/18 12:00	01/29/18 14:12	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	20.0	3.1	1	01/29/18 12:00	01/29/18 14:12	78-93-3	
2-Hexanone	**<2.3**	ug/kg	20.0	2.3	1	01/29/18 12:00	01/29/18 14:12	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.0	2.6	1	01/29/18 12:00	01/29/18 14:12	108-10-1	
Acetone	**<8.3**	ug/kg	50.0	8.3	1	01/29/18 12:00	01/29/18 14:12	67-64-1	
Benzene	**<0.55**	ug/kg	4.0	0.55	1	01/29/18 12:00	01/29/18 14:12	71-43-2	
Bromodichloromethane	**<0.63**	ug/kg	4.0	0.63	1	01/29/18 12:00	01/29/18 14:12	75-27-4	
Bromoform	**<2.6**	ug/kg	20.0	2.6	1	01/29/18 12:00	01/29/18 14:12	75-25-2	
Bromomethane	**<3.5**	ug/kg	20.0	3.5	1	01/29/18 12:00	01/29/18 14:12	74-83-9	
Carbon tetrachloride	**<0.56**	ug/kg	4.0	0.56	1	01/29/18 12:00	01/29/18 14:12	56-23-5	
Chlorobenzene	**<0.60**	ug/kg	4.0	0.60	1	01/29/18 12:00	01/29/18 14:12	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.0	1.6	1	01/29/18 12:00	01/29/18 14:12	75-00-3	
Chloroform	**<0.78**	ug/kg	4.0	0.78	1	01/29/18 12:00	01/29/18 14:12	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.0	1.8	1	01/29/18 12:00	01/29/18 14:12	74-87-3	
Dibromochloromethane	**<0.20**	ug/kg	4.0	0.20	1	01/29/18 12:00	01/29/18 14:12	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	10.0	3.8	1	01/29/18 12:00	01/29/18 14:12	75-71-8	
Ethylbenzene	**<0.73**	ug/kg	4.0	0.73	1	01/29/18 12:00	01/29/18 14:12	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	10.0	2.6	1	01/29/18 12:00	01/29/18 14:12	87-68-3	
Methyl-tert-butyl ether	**<0.59**	ug/kg	4.0	0.59	1	01/29/18 12:00	01/29/18 14:12	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.0	2.3	1	01/29/18 12:00	01/29/18 14:12	75-09-2	
Naphthalene	**<1.4**	ug/kg	10.0	1.4	1	01/29/18 12:00	01/29/18 14:12	91-20-3	
Styrene	**<0.42**	ug/kg	4.0	0.42	1	01/29/18 12:00	01/29/18 14:12	100-42-5	
Tetrachloroethene	**<0.52**	ug/kg	4.0	0.52	1	01/29/18 12:00	01/29/18 14:12	127-18-4	
Tetrahydrofuran	**<9.1**	ug/kg	40.0	9.1	1	01/29/18 12:00	01/29/18 14:12	109-99-9	
Toluene	**<1.1**	ug/kg	4.0	1.1	1	01/29/18 12:00	01/29/18 14:12	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.0	0.11	1	01/29/18 12:00	01/29/18 14:12	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.0	1.7	1	01/29/18 12:00	01/29/18 14:12	75-69-4	
Vinyl acetate	**<1.9**	ug/kg	10.0	1.9	1	01/29/18 12:00	01/29/18 14:12	108-05-4	
Vinyl chloride	**<0.95**	ug/kg	4.0	0.95	1	01/29/18 12:00	01/29/18 14:12	75-01-4	
cis-1,2-Dichloroethene	**<0.68**	ug/kg	4.0	0.68	1	01/29/18 12:00	01/29/18 14:12	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.0	1.9	1	01/29/18 12:00	01/29/18 14:12	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	8.0	1.0	1	01/29/18 12:00	01/29/18 14:12	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: Trip Blank **Lab ID: 10418534001** Collected: 01/23/18 08:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
o-Xylene	**<0.48**	ug/kg	4.0	0.48	1	01/29/18 12:00	01/29/18 14:12	95-47-6	
trans-1,2-Dichloroethene	**<0.71**	ug/kg	4.0	0.71	1	01/29/18 12:00	01/29/18 14:12	156-60-5	
trans-1,3-Dichloropropene	**<0.73**	ug/kg	4.0	0.73	1	01/29/18 12:00	01/29/18 14:12	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-126		1	01/29/18 12:00	01/29/18 14:12	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	01/29/18 12:00	01/29/18 14:12	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	01/29/18 12:00	01/29/18 14:12	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-5 **Lab ID: 10418534002** Collected: 01/23/18 10:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**19.3**	%	0.10	0.10	1		01/29/18 08:52		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.80**	ug/kg	4.3	0.80	1	01/29/18 12:00	01/29/18 16:13	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.58**	ug/kg	4.3	0.58	1	01/29/18 12:00	01/29/18 16:13	79-34-5	
1,1,2-Trichloroethane	**<0.74**	ug/kg	4.3	0.74	1	01/29/18 12:00	01/29/18 16:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.77**	ug/kg	4.3	0.77	1	01/29/18 12:00	01/29/18 16:13	76-13-1	
1,1-Dichloroethane	**<0.76**	ug/kg	4.3	0.76	1	01/29/18 12:00	01/29/18 16:13	75-34-3	
1,1-Dichloroethene	**<0.61**	ug/kg	4.3	0.61	1	01/29/18 12:00	01/29/18 16:13	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.3	1.7	1	01/29/18 12:00	01/29/18 16:13	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.3	0.21	1	01/29/18 12:00	01/29/18 16:13	95-63-6	
1,2-Dibromoethane (EDB)	**<0.83**	ug/kg	4.3	0.83	1	01/29/18 12:00	01/29/18 16:13	106-93-4	
1,2-Dichlorobenzene	**<0.67**	ug/kg	4.3	0.67	1	01/29/18 12:00	01/29/18 16:13	95-50-1	
1,2-Dichloroethane	**<0.75**	ug/kg	4.3	0.75	1	01/29/18 12:00	01/29/18 16:13	107-06-2	
1,3,5-Trimethylbenzene	**<0.51**	ug/kg	4.3	0.51	1	01/29/18 12:00	01/29/18 16:13	108-67-8	
1,3-Dichlorobenzene	**<0.55**	ug/kg	4.3	0.55	1	01/29/18 12:00	01/29/18 16:13	541-73-1	
1,4-Dichlorobenzene	**<0.61**	ug/kg	4.3	0.61	1	01/29/18 12:00	01/29/18 16:13	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.3	3.3	1	01/29/18 12:00	01/29/18 16:13	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.3	2.5	1	01/29/18 12:00	01/29/18 16:13	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.3	2.8	1	01/29/18 12:00	01/29/18 16:13	108-10-1	
Acetone	**<8.9**	ug/kg	53.2	8.9	1	01/29/18 12:00	01/29/18 16:13	67-64-1	
Benzene	**<0.59**	ug/kg	4.3	0.59	1	01/29/18 12:00	01/29/18 16:13	71-43-2	
Bromodichloromethane	**<0.67**	ug/kg	4.3	0.67	1	01/29/18 12:00	01/29/18 16:13	75-27-4	
Bromoform	**<2.7**	ug/kg	21.3	2.7	1	01/29/18 12:00	01/29/18 16:13	75-25-2	
Bromomethane	**<3.7**	ug/kg	21.3	3.7	1	01/29/18 12:00	01/29/18 16:13	74-83-9	
Carbon tetrachloride	**<0.59**	ug/kg	4.3	0.59	1	01/29/18 12:00	01/29/18 16:13	56-23-5	
Chlorobenzene	**<0.64**	ug/kg	4.3	0.64	1	01/29/18 12:00	01/29/18 16:13	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.6	1.6	1	01/29/18 12:00	01/29/18 16:13	75-00-3	
Chloroform	**<0.83**	ug/kg	4.3	0.83	1	01/29/18 12:00	01/29/18 16:13	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.6	1.9	1	01/29/18 12:00	01/29/18 16:13	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.3	0.22	1	01/29/18 12:00	01/29/18 16:13	124-48-1	
Dichlorodifluoromethane	**<4.0**	ug/kg	10.6	4.0	1	01/29/18 12:00	01/29/18 16:13	75-71-8	
Ethylbenzene	**<0.78**	ug/kg	4.3	0.78	1	01/29/18 12:00	01/29/18 16:13	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.6	2.8	1	01/29/18 12:00	01/29/18 16:13	87-68-3	
Methyl-tert-butyl ether	**<0.63**	ug/kg	4.3	0.63	1	01/29/18 12:00	01/29/18 16:13	1634-04-4	
Methylene Chloride	**<2.4**	ug/kg	21.3	2.4	1	01/29/18 12:00	01/29/18 16:13	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.6	1.5	1	01/29/18 12:00	01/29/18 16:13	91-20-3	
Styrene	**<0.45**	ug/kg	4.3	0.45	1	01/29/18 12:00	01/29/18 16:13	100-42-5	
Tetrachloroethene	**<0.55**	ug/kg	4.3	0.55	1	01/29/18 12:00	01/29/18 16:13	127-18-4	
Tetrahydrofuran	**<9.7**	ug/kg	42.5	9.7	1	01/29/18 12:00	01/29/18 16:13	109-99-9	
Toluene	**<1.2**	ug/kg	4.3	1.2	1	01/29/18 12:00	01/29/18 16:13	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.3	0.12	1	01/29/18 12:00	01/29/18 16:13	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.6	1.8	1	01/29/18 12:00	01/29/18 16:13	75-69-4	
Vinyl acetate	**<2.1**	ug/kg	10.6	2.1	1	01/29/18 12:00	01/29/18 16:13	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.3	1.0	1	01/29/18 12:00	01/29/18 16:13	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-5 **Lab ID: 10418534002** Collected: 01/23/18 10:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.72**	ug/kg	4.3	0.72	1	01/29/18 12:00	01/29/18 16:13	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.3	2.0	1	01/29/18 12:00	01/29/18 16:13	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.5	1.1	1	01/29/18 12:00	01/29/18 16:13	179601-23-1	
o-Xylene	**<0.51**	ug/kg	4.3	0.51	1	01/29/18 12:00	01/29/18 16:13	95-47-6	
trans-1,2-Dichloroethene	**<0.75**	ug/kg	4.3	0.75	1	01/29/18 12:00	01/29/18 16:13	156-60-5	
trans-1,3-Dichloropropene	**<0.78**	ug/kg	4.3	0.78	1	01/29/18 12:00	01/29/18 16:13	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	88	%.	75-126		1	01/29/18 12:00	01/29/18 16:13	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	01/29/18 12:00	01/29/18 16:13	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-128		1	01/29/18 12:00	01/29/18 16:13	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-15 **Lab ID: 10418534003** Collected: 01/23/18 10:55 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**15.1**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.70**	ug/kg	3.7	0.70	1	01/29/18 12:00	01/29/18 16:32	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/kg	3.7	0.50	1	01/29/18 12:00	01/29/18 16:32	79-34-5	
1,1,2-Trichloroethane	**<0.64**	ug/kg	3.7	0.64	1	01/29/18 12:00	01/29/18 16:32	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.67**	ug/kg	3.7	0.67	1	01/29/18 12:00	01/29/18 16:32	76-13-1	
1,1-Dichloroethane	**<0.67**	ug/kg	3.7	0.67	1	01/29/18 12:00	01/29/18 16:32	75-34-3	
1,1-Dichloroethene	**<0.53**	ug/kg	3.7	0.53	1	01/29/18 12:00	01/29/18 16:32	75-35-4	
1,2,4-Trichlorobenzene	**<1.5**	ug/kg	3.7	1.5	1	01/29/18 12:00	01/29/18 16:32	120-82-1	
1,2,4-Trimethylbenzene	**<0.18**	ug/kg	3.7	0.18	1	01/29/18 12:00	01/29/18 16:32	95-63-6	
1,2-Dibromoethane (EDB)	**<0.73**	ug/kg	3.7	0.73	1	01/29/18 12:00	01/29/18 16:32	106-93-4	
1,2-Dichlorobenzene	**<0.59**	ug/kg	3.7	0.59	1	01/29/18 12:00	01/29/18 16:32	95-50-1	
1,2-Dichloroethane	**<0.66**	ug/kg	3.7	0.66	1	01/29/18 12:00	01/29/18 16:32	107-06-2	
1,3,5-Trimethylbenzene	**<0.45**	ug/kg	3.7	0.45	1	01/29/18 12:00	01/29/18 16:32	108-67-8	
1,3-Dichlorobenzene	**<0.48**	ug/kg	3.7	0.48	1	01/29/18 12:00	01/29/18 16:32	541-73-1	
1,4-Dichlorobenzene	**<0.54**	ug/kg	3.7	0.54	1	01/29/18 12:00	01/29/18 16:32	106-46-7	
2-Butanone (MEK)	**<2.9**	ug/kg	18.6	2.9	1	01/29/18 12:00	01/29/18 16:32	78-93-3	
2-Hexanone	**<2.2**	ug/kg	18.6	2.2	1	01/29/18 12:00	01/29/18 16:32	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.4**	ug/kg	18.6	2.4	1	01/29/18 12:00	01/29/18 16:32	108-10-1	
Acetone	**<7.7**	ug/kg	46.4	7.7	1	01/29/18 12:00	01/29/18 16:32	67-64-1	
Benzene	**<0.51**	ug/kg	3.7	0.51	1	01/29/18 12:00	01/29/18 16:32	71-43-2	
Bromodichloromethane	**<0.59**	ug/kg	3.7	0.59	1	01/29/18 12:00	01/29/18 16:32	75-27-4	
Bromoform	**<2.4**	ug/kg	18.6	2.4	1	01/29/18 12:00	01/29/18 16:32	75-25-2	
Bromomethane	**<3.2**	ug/kg	18.6	3.2	1	01/29/18 12:00	01/29/18 16:32	74-83-9	
Carbon tetrachloride	**<0.52**	ug/kg	3.7	0.52	1	01/29/18 12:00	01/29/18 16:32	56-23-5	
Chlorobenzene	**<0.56**	ug/kg	3.7	0.56	1	01/29/18 12:00	01/29/18 16:32	108-90-7	
Chloroethane	**<1.4**	ug/kg	9.3	1.4	1	01/29/18 12:00	01/29/18 16:32	75-00-3	
Chloroform	**4.9**	ug/kg	3.7	0.73	1	01/29/18 12:00	01/29/18 16:32	67-66-3	
Chloromethane	**<1.6**	ug/kg	9.3	1.6	1	01/29/18 12:00	01/29/18 16:32	74-87-3	
Dibromochloromethane	**<0.19**	ug/kg	3.7	0.19	1	01/29/18 12:00	01/29/18 16:32	124-48-1	
Dichlorodifluoromethane	**<3.5**	ug/kg	9.3	3.5	1	01/29/18 12:00	01/29/18 16:32	75-71-8	
Ethylbenzene	**<0.68**	ug/kg	3.7	0.68	1	01/29/18 12:00	01/29/18 16:32	100-41-4	
Hexachloro-1,3-butadiene	**<2.4**	ug/kg	9.3	2.4	1	01/29/18 12:00	01/29/18 16:32	87-68-3	
Methyl-tert-butyl ether	**<0.55**	ug/kg	3.7	0.55	1	01/29/18 12:00	01/29/18 16:32	1634-04-4	
Methylene Chloride	**<2.1**	ug/kg	18.6	2.1	1	01/29/18 12:00	01/29/18 16:32	75-09-2	
Naphthalene	**<1.3**	ug/kg	9.3	1.3	1	01/29/18 12:00	01/29/18 16:32	91-20-3	
Styrene	**<0.39**	ug/kg	3.7	0.39	1	01/29/18 12:00	01/29/18 16:32	100-42-5	
Tetrachloroethene	**<0.48**	ug/kg	3.7	0.48	1	01/29/18 12:00	01/29/18 16:32	127-18-4	
Tetrahydrofuran	**<8.5**	ug/kg	37.2	8.5	1	01/29/18 12:00	01/29/18 16:32	109-99-9	
Toluene	**<1.0**	ug/kg	3.7	1.0	1	01/29/18 12:00	01/29/18 16:32	108-88-3	
Trichloroethene	**<0.10**	ug/kg	3.7	0.10	1	01/29/18 12:00	01/29/18 16:32	79-01-6	
Trichlorofluoromethane	**<1.6**	ug/kg	9.3	1.6	1	01/29/18 12:00	01/29/18 16:32	75-69-4	
Vinyl acetate	**<1.8**	ug/kg	9.3	1.8	1	01/29/18 12:00	01/29/18 16:32	108-05-4	
Vinyl chloride	**<0.88**	ug/kg	3.7	0.88	1	01/29/18 12:00	01/29/18 16:32	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-15 **Lab ID: 10418534003** Collected: 01/23/18 10:55 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.63**	ug/kg	3.7	0.63	1	01/29/18 12:00	01/29/18 16:32	156-59-2	
cis-1,3-Dichloropropene	**<1.7**	ug/kg	3.7	1.7	1	01/29/18 12:00	01/29/18 16:32	10061-01-5	
m&p-Xylene	**<0.98**	ug/kg	7.4	0.98	1	01/29/18 12:00	01/29/18 16:32	179601-23-1	
o-Xylene	**<0.44**	ug/kg	3.7	0.44	1	01/29/18 12:00	01/29/18 16:32	95-47-6	
trans-1,2-Dichloroethene	**<0.66**	ug/kg	3.7	0.66	1	01/29/18 12:00	01/29/18 16:32	156-60-5	
trans-1,3-Dichloropropene	**<0.68**	ug/kg	3.7	0.68	1	01/29/18 12:00	01/29/18 16:32	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-126		1	01/29/18 12:00	01/29/18 16:32	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	01/29/18 12:00	01/29/18 16:32	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-128		1	01/29/18 12:00	01/29/18 16:32	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-25 **Lab ID: 10418534004** Collected: 01/23/18 11:35 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**31.9**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.97**	ug/kg	5.1	0.97	1	02/06/18 15:10	02/06/18 17:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.70**	ug/kg	5.1	0.70	1	02/06/18 15:10	02/06/18 17:29	79-34-5	
1,1,2-Trichloroethane	**<0.89**	ug/kg	5.1	0.89	1	02/06/18 15:10	02/06/18 17:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.93**	ug/kg	5.1	0.93	1	02/06/18 15:10	02/06/18 17:29	76-13-1	
1,1-Dichloroethane	**<0.92**	ug/kg	5.1	0.92	1	02/06/18 15:10	02/06/18 17:29	75-34-3	
1,1-Dichloroethene	**<0.74**	ug/kg	5.1	0.74	1	02/06/18 15:10	02/06/18 17:29	75-35-4	
1,2,4-Trichlorobenzene	**<2.1**	ug/kg	5.1	2.1	1	02/06/18 15:10	02/06/18 17:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.25**	ug/kg	5.1	0.25	1	02/06/18 15:10	02/06/18 17:29	95-63-6	
1,2-Dibromoethane (EDB)	**<1.0**	ug/kg	5.1	1.0	1	02/06/18 15:10	02/06/18 17:29	106-93-4	
1,2-Dichlorobenzene	**<0.81**	ug/kg	5.1	0.81	1	02/06/18 15:10	02/06/18 17:29	95-50-1	
1,2-Dichloroethane	**<0.91**	ug/kg	5.1	0.91	1	02/06/18 15:10	02/06/18 17:29	107-06-2	
1,3,5-Trimethylbenzene	**<0.62**	ug/kg	5.1	0.62	1	02/06/18 15:10	02/06/18 17:29	108-67-8	
1,3-Dichlorobenzene	**<0.67**	ug/kg	5.1	0.67	1	02/06/18 15:10	02/06/18 17:29	541-73-1	
1,4-Dichlorobenzene	**<0.74**	ug/kg	5.1	0.74	1	02/06/18 15:10	02/06/18 17:29	106-46-7	
2-Butanone (MEK)	**<3.9**	ug/kg	25.7	3.9	1	02/06/18 15:10	02/06/18 17:29	78-93-3	
2-Hexanone	**<3.0**	ug/kg	25.7	3.0	1	02/06/18 15:10	02/06/18 17:29	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.3**	ug/kg	25.7	3.3	1	02/06/18 15:10	02/06/18 17:29	108-10-1	
Acetone	**<10.7**	ug/kg	64.3	10.7	1	02/06/18 15:10	02/06/18 17:29	67-64-1	
Benzene	**<0.71**	ug/kg	5.1	0.71	1	02/06/18 15:10	02/06/18 17:29	71-43-2	
Bromodichloromethane	**<0.81**	ug/kg	5.1	0.81	1	02/06/18 15:10	02/06/18 17:29	75-27-4	
Bromoform	**<3.3**	ug/kg	25.7	3.3	1	02/06/18 15:10	02/06/18 17:29	75-25-2	
Bromomethane	**<4.5**	ug/kg	25.7	4.5	1	02/06/18 15:10	02/06/18 17:29	74-83-9	
Carbon tetrachloride	**4.2J**	ug/kg	5.1	0.71	1	02/06/18 15:10	02/06/18 17:29	56-23-5	
Chlorobenzene	**<0.77**	ug/kg	5.1	0.77	1	02/06/18 15:10	02/06/18 17:29	108-90-7	
Chloroethane	**<2.0**	ug/kg	12.9	2.0	1	02/06/18 15:10	02/06/18 17:29	75-00-3	
Chloroform	**5.5**	ug/kg	5.1	1.0	1	02/06/18 15:10	02/06/18 17:29	67-66-3	
Chloromethane	**<2.3**	ug/kg	12.9	2.3	1	02/06/18 15:10	02/06/18 17:29	74-87-3	
Dibromochloromethane	**<0.26**	ug/kg	5.1	0.26	1	02/06/18 15:10	02/06/18 17:29	124-48-1	
Dichlorodifluoromethane	**<4.9**	ug/kg	12.9	4.9	1	02/06/18 15:10	02/06/18 17:29	75-71-8	
Ethylbenzene	**<0.94**	ug/kg	5.1	0.94	1	02/06/18 15:10	02/06/18 17:29	100-41-4	
Hexachloro-1,3-butadiene	**<3.4**	ug/kg	12.9	3.4	1	02/06/18 15:10	02/06/18 17:29	87-68-3	
Methyl-tert-butyl ether	**<0.76**	ug/kg	5.1	0.76	1	02/06/18 15:10	02/06/18 17:29	1634-04-4	
Methylene Chloride	**<2.9**	ug/kg	25.7	2.9	1	02/06/18 15:10	02/06/18 17:29	75-09-2	
Naphthalene	**<1.9**	ug/kg	12.9	1.9	1	02/06/18 15:10	02/06/18 17:29	91-20-3	
Styrene	**<0.55**	ug/kg	5.1	0.55	1	02/06/18 15:10	02/06/18 17:29	100-42-5	
Tetrachloroethene	**<0.67**	ug/kg	5.1	0.67	1	02/06/18 15:10	02/06/18 17:29	127-18-4	
Tetrahydrofuran	**<11.8**	ug/kg	51.4	11.8	1	02/06/18 15:10	02/06/18 17:29	109-99-9	
Toluene	**<1.4**	ug/kg	5.1	1.4	1	02/06/18 15:10	02/06/18 17:29	108-88-3	
Trichloroethene	**<0.14**	ug/kg	5.1	0.14	1	02/06/18 15:10	02/06/18 17:29	79-01-6	
Trichlorofluoromethane	**<2.1**	ug/kg	12.9	2.1	1	02/06/18 15:10	02/06/18 17:29	75-69-4	
Vinyl acetate	**<2.5**	ug/kg	12.9	2.5	1	02/06/18 15:10	02/06/18 17:29	108-05-4	
Vinyl chloride	**<1.2**	ug/kg	5.1	1.2	1	02/06/18 15:10	02/06/18 17:29	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-25 **Lab ID: 10418534004** Collected: 01/23/18 11:35 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.87**	ug/kg	5.1	0.87	1	02/06/18 15:10	02/06/18 17:29	156-59-2	
cis-1,3-Dichloropropene	**<2.4**	ug/kg	5.1	2.4	1	02/06/18 15:10	02/06/18 17:29	10061-01-5	
m&p-Xylene	**<1.4**	ug/kg	10.3	1.4	1	02/06/18 15:10	02/06/18 17:29	179601-23-1	
o-Xylene	**<0.62**	ug/kg	5.1	0.62	1	02/06/18 15:10	02/06/18 17:29	95-47-6	
trans-1,2-Dichloroethene	**<0.91**	ug/kg	5.1	0.91	1	02/06/18 15:10	02/06/18 17:29	156-60-5	
trans-1,3-Dichloropropene	**<0.94**	ug/kg	5.1	0.94	1	02/06/18 15:10	02/06/18 17:29	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-126		1	02/06/18 15:10	02/06/18 17:29	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	02/06/18 15:10	02/06/18 17:29	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-128		1	02/06/18 15:10	02/06/18 17:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-36 **Lab ID: 10418534005** Collected: 01/23/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**34.1**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.79**	ug/kg	5.8	0.79	1	01/29/18 12:00	01/29/18 17:09	79-34-5	
1,1,2-Trichloroethane	**<1.0**	ug/kg	5.8	1.0	1	01/29/18 12:00	01/29/18 17:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.1**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.8	1.0	1	01/29/18 12:00	01/29/18 17:09	75-34-3	
1,1-Dichloroethene	**<0.84**	ug/kg	5.8	0.84	1	01/29/18 12:00	01/29/18 17:09	75-35-4	
1,2,4-Trichlorobenzene	**<2.4**	ug/kg	5.8	2.4	1	01/29/18 12:00	01/29/18 17:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/kg	5.8	0.28	1	01/29/18 12:00	01/29/18 17:09	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	106-93-4	
1,2-Dichlorobenzene	**<0.92**	ug/kg	5.8	0.92	1	01/29/18 12:00	01/29/18 17:09	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/kg	5.8	1.0	1	01/29/18 12:00	01/29/18 17:09	107-06-2	
1,3,5-Trimethylbenzene	**<0.70**	ug/kg	5.8	0.70	1	01/29/18 12:00	01/29/18 17:09	108-67-8	
1,3-Dichlorobenzene	**<0.76**	ug/kg	5.8	0.76	1	01/29/18 12:00	01/29/18 17:09	541-73-1	
1,4-Dichlorobenzene	**<0.84**	ug/kg	5.8	0.84	1	01/29/18 12:00	01/29/18 17:09	106-46-7	
2-Butanone (MEK)	**<4.5**	ug/kg	29.2	4.5	1	01/29/18 12:00	01/29/18 17:09	78-93-3	
2-Hexanone	**<3.4**	ug/kg	29.2	3.4	1	01/29/18 12:00	01/29/18 17:09	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.8**	ug/kg	29.2	3.8	1	01/29/18 12:00	01/29/18 17:09	108-10-1	
Acetone	**<12.2**	ug/kg	73.0	12.2	1	01/29/18 12:00	01/29/18 17:09	67-64-1	
Benzene	**<0.81**	ug/kg	5.8	0.81	1	01/29/18 12:00	01/29/18 17:09	71-43-2	
Bromodichloromethane	**<0.92**	ug/kg	5.8	0.92	1	01/29/18 12:00	01/29/18 17:09	75-27-4	
Bromoform	**<3.8**	ug/kg	29.2	3.8	1	01/29/18 12:00	01/29/18 17:09	75-25-2	
Bromomethane	**<5.1**	ug/kg	29.2	5.1	1	01/29/18 12:00	01/29/18 17:09	74-83-9	
Carbon tetrachloride	**20.6**	ug/kg	5.8	0.81	1	01/29/18 12:00	01/29/18 17:09	56-23-5	
Chlorobenzene	**<0.87**	ug/kg	5.8	0.87	1	01/29/18 12:00	01/29/18 17:09	108-90-7	
Chloroethane	**<2.3**	ug/kg	14.6	2.3	1	01/29/18 12:00	01/29/18 17:09	75-00-3	
Chloroform	**9.4**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	67-66-3	
Chloromethane	**<2.6**	ug/kg	14.6	2.6	1	01/29/18 12:00	01/29/18 17:09	74-87-3	
Dibromochloromethane	**<0.30**	ug/kg	5.8	0.30	1	01/29/18 12:00	01/29/18 17:09	124-48-1	
Dichlorodifluoromethane	**<5.5**	ug/kg	14.6	5.5	1	01/29/18 12:00	01/29/18 17:09	75-71-8	
Ethylbenzene	**<1.1**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	100-41-4	
Hexachloro-1,3-butadiene	**<3.8**	ug/kg	14.6	3.8	1	01/29/18 12:00	01/29/18 17:09	87-68-3	
Methyl-tert-butyl ether	**<0.87**	ug/kg	5.8	0.87	1	01/29/18 12:00	01/29/18 17:09	1634-04-4	
Methylene Chloride	**<3.3**	ug/kg	29.2	3.3	1	01/29/18 12:00	01/29/18 17:09	75-09-2	
Naphthalene	**<2.1**	ug/kg	14.6	2.1	1	01/29/18 12:00	01/29/18 17:09	91-20-3	
Styrene	**<0.62**	ug/kg	5.8	0.62	1	01/29/18 12:00	01/29/18 17:09	100-42-5	
Tetrachloroethene	**<0.76**	ug/kg	5.8	0.76	1	01/29/18 12:00	01/29/18 17:09	127-18-4	
Tetrahydrofuran	**<13.4**	ug/kg	58.4	13.4	1	01/29/18 12:00	01/29/18 17:09	109-99-9	
Toluene	**<1.6**	ug/kg	5.8	1.6	1	01/29/18 12:00	01/29/18 17:09	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.8	0.16	1	01/29/18 12:00	01/29/18 17:09	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.6	2.4	1	01/29/18 12:00	01/29/18 17:09	75-69-4	
Vinyl acetate	**<2.8**	ug/kg	14.6	2.8	1	01/29/18 12:00	01/29/18 17:09	108-05-4	
Vinyl chloride	**<1.4**	ug/kg	5.8	1.4	1	01/29/18 12:00	01/29/18 17:09	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB101B-36 **Lab ID: 10418534005** Collected: 01/23/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.99**	ug/kg	5.8	0.99	1	01/29/18 12:00	01/29/18 17:09	156-59-2	
cis-1,3-Dichloropropene	**<2.7**	ug/kg	5.8	2.7	1	01/29/18 12:00	01/29/18 17:09	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.7	1.5	1	01/29/18 12:00	01/29/18 17:09	179601-23-1	
o-Xylene	**<0.70**	ug/kg	5.8	0.70	1	01/29/18 12:00	01/29/18 17:09	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.8	1.0	1	01/29/18 12:00	01/29/18 17:09	156-60-5	
trans-1,3-Dichloropropene	**<1.1**	ug/kg	5.8	1.1	1	01/29/18 12:00	01/29/18 17:09	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-126		1	01/29/18 12:00	01/29/18 17:09	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	01/29/18 12:00	01/29/18 17:09	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	01/29/18 12:00	01/29/18 17:09	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-5 **Lab ID: 10418534006** Collected: 01/24/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**14.3**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.72**	ug/kg	3.8	0.72	1	02/06/18 15:10	02/06/18 17:48	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.52**	ug/kg	3.8	0.52	1	02/06/18 15:10	02/06/18 17:48	79-34-5	
1,1,2-Trichloroethane	**<0.66**	ug/kg	3.8	0.66	1	02/06/18 15:10	02/06/18 17:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.69**	ug/kg	3.8	0.69	1	02/06/18 15:10	02/06/18 17:48	76-13-1	
1,1-Dichloroethane	**<0.68**	ug/kg	3.8	0.68	1	02/06/18 15:10	02/06/18 17:48	75-34-3	
1,1-Dichloroethene	**<0.55**	ug/kg	3.8	0.55	1	02/06/18 15:10	02/06/18 17:48	75-35-4	
1,2,4-Trichlorobenzene	**<1.5**	ug/kg	3.8	1.5	1	02/06/18 15:10	02/06/18 17:48	120-82-1	
1,2,4-Trimethylbenzene	**0.26J**	ug/kg	3.8	0.19	1	02/06/18 15:10	02/06/18 17:48	95-63-6	
1,2-Dibromoethane (EDB)	**<0.75**	ug/kg	3.8	0.75	1	02/06/18 15:10	02/06/18 17:48	106-93-4	
1,2-Dichlorobenzene	**<0.60**	ug/kg	3.8	0.60	1	02/06/18 15:10	02/06/18 17:48	95-50-1	
1,2-Dichloroethane	**<0.67**	ug/kg	3.8	0.67	1	02/06/18 15:10	02/06/18 17:48	107-06-2	
1,3,5-Trimethylbenzene	**<0.46**	ug/kg	3.8	0.46	1	02/06/18 15:10	02/06/18 17:48	108-67-8	
1,3-Dichlorobenzene	**<0.49**	ug/kg	3.8	0.49	1	02/06/18 15:10	02/06/18 17:48	541-73-1	
1,4-Dichlorobenzene	**<0.55**	ug/kg	3.8	0.55	1	02/06/18 15:10	02/06/18 17:48	106-46-7	
2-Butanone (MEK)	**5.4J**	ug/kg	19.1	2.9	1	02/06/18 15:10	02/06/18 17:48	78-93-3	
2-Hexanone	**<2.2**	ug/kg	19.1	2.2	1	02/06/18 15:10	02/06/18 17:48	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/kg	19.1	2.5	1	02/06/18 15:10	02/06/18 17:48	108-10-1	
Acetone	**<7.9**	ug/kg	47.7	7.9	1	02/06/18 15:10	02/06/18 17:48	67-64-1	
Benzene	**<0.53**	ug/kg	3.8	0.53	1	02/06/18 15:10	02/06/18 17:48	71-43-2	
Bromodichloromethane	**<0.60**	ug/kg	3.8	0.60	1	02/06/18 15:10	02/06/18 17:48	75-27-4	
Bromoform	**<2.5**	ug/kg	19.1	2.5	1	02/06/18 15:10	02/06/18 17:48	75-25-2	
Bromomethane	**<3.3**	ug/kg	19.1	3.3	1	02/06/18 15:10	02/06/18 17:48	74-83-9	
Carbon tetrachloride	**5.7**	ug/kg	3.8	0.53	1	02/06/18 15:10	02/06/18 17:48	56-23-5	
Chlorobenzene	**<0.57**	ug/kg	3.8	0.57	1	02/06/18 15:10	02/06/18 17:48	108-90-7	
Chloroethane	**<1.5**	ug/kg	9.5	1.5	1	02/06/18 15:10	02/06/18 17:48	75-00-3	
Chloroform	**8.7**	ug/kg	3.8	0.75	1	02/06/18 15:10	02/06/18 17:48	67-66-3	
Chloromethane	**<1.7**	ug/kg	9.5	1.7	1	02/06/18 15:10	02/06/18 17:48	74-87-3	
Dibromochloromethane	**<0.19**	ug/kg	3.8	0.19	1	02/06/18 15:10	02/06/18 17:48	124-48-1	
Dichlorodifluoromethane	**<3.6**	ug/kg	9.5	3.6	1	02/06/18 15:10	02/06/18 17:48	75-71-8	
Ethylbenzene	**<0.70**	ug/kg	3.8	0.70	1	02/06/18 15:10	02/06/18 17:48	100-41-4	
Hexachloro-1,3-butadiene	**<2.5**	ug/kg	9.5	2.5	1	02/06/18 15:10	02/06/18 17:48	87-68-3	
Methyl-tert-butyl ether	**<0.57**	ug/kg	3.8	0.57	1	02/06/18 15:10	02/06/18 17:48	1634-04-4	
Methylene Chloride	**<2.2**	ug/kg	19.1	2.2	1	02/06/18 15:10	02/06/18 17:48	75-09-2	
Naphthalene	**<1.4**	ug/kg	9.5	1.4	1	02/06/18 15:10	02/06/18 17:48	91-20-3	
Styrene	**<0.40**	ug/kg	3.8	0.40	1	02/06/18 15:10	02/06/18 17:48	100-42-5	
Tetrachloroethene	**<0.49**	ug/kg	3.8	0.49	1	02/06/18 15:10	02/06/18 17:48	127-18-4	
Tetrahydrofuran	**<8.7**	ug/kg	38.2	8.7	1	02/06/18 15:10	02/06/18 17:48	109-99-9	
Toluene	**<1.0**	ug/kg	3.8	1.0	1	02/06/18 15:10	02/06/18 17:48	108-88-3	
Trichloroethene	**<0.11**	ug/kg	3.8	0.11	1	02/06/18 15:10	02/06/18 17:48	79-01-6	
Trichlorofluoromethane	**<1.6**	ug/kg	9.5	1.6	1	02/06/18 15:10	02/06/18 17:48	75-69-4	
Vinyl acetate	**<1.8**	ug/kg	9.5	1.8	1	02/06/18 15:10	02/06/18 17:48	108-05-4	
Vinyl chloride	**<0.90**	ug/kg	3.8	0.90	1	02/06/18 15:10	02/06/18 17:48	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-5 **Lab ID: 10418534006** Collected: 01/24/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.65**	ug/kg	3.8	0.65	1	02/06/18 15:10	02/06/18 17:48	156-59-2	
cis-1,3-Dichloropropene	**<1.8**	ug/kg	3.8	1.8	1	02/06/18 15:10	02/06/18 17:48	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	7.6	1.0	1	02/06/18 15:10	02/06/18 17:48	179601-23-1	
o-Xylene	**<0.46**	ug/kg	3.8	0.46	1	02/06/18 15:10	02/06/18 17:48	95-47-6	
trans-1,2-Dichloroethene	**<0.67**	ug/kg	3.8	0.67	1	02/06/18 15:10	02/06/18 17:48	156-60-5	
trans-1,3-Dichloropropene	**<0.70**	ug/kg	3.8	0.70	1	02/06/18 15:10	02/06/18 17:48	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	114	%.	75-126		1	02/06/18 15:10	02/06/18 17:48	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	02/06/18 15:10	02/06/18 17:48	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	02/06/18 15:10	02/06/18 17:48	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-15 **Lab ID: 10418534007** Collected: 01/24/18 12:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**33.2**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.79**	ug/kg	5.9	0.79	1	01/29/18 12:00	01/29/18 17:46	79-34-5	
1,1,2-Trichloroethane	**<1.0**	ug/kg	5.9	1.0	1	01/29/18 12:00	01/29/18 17:46	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	76-13-1	
1,1-Dichloroethane	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	75-34-3	
1,1-Dichloroethene	**<0.84**	ug/kg	5.9	0.84	1	01/29/18 12:00	01/29/18 17:46	75-35-4	
1,2,4-Trichlorobenzene	**<2.4**	ug/kg	5.9	2.4	1	01/29/18 12:00	01/29/18 17:46	120-82-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/kg	5.9	0.28	1	01/29/18 12:00	01/29/18 17:46	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	106-93-4	
1,2-Dichlorobenzene	**<0.92**	ug/kg	5.9	0.92	1	01/29/18 12:00	01/29/18 17:46	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/kg	5.9	1.0	1	01/29/18 12:00	01/29/18 17:46	107-06-2	
1,3,5-Trimethylbenzene	**<0.70**	ug/kg	5.9	0.70	1	01/29/18 12:00	01/29/18 17:46	108-67-8	
1,3-Dichlorobenzene	**<0.76**	ug/kg	5.9	0.76	1	01/29/18 12:00	01/29/18 17:46	541-73-1	
1,4-Dichlorobenzene	**<0.85**	ug/kg	5.9	0.85	1	01/29/18 12:00	01/29/18 17:46	106-46-7	
2-Butanone (MEK)	**<4.5**	ug/kg	29.3	4.5	1	01/29/18 12:00	01/29/18 17:46	78-93-3	
2-Hexanone	**<3.4**	ug/kg	29.3	3.4	1	01/29/18 12:00	01/29/18 17:46	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.8**	ug/kg	29.3	3.8	1	01/29/18 12:00	01/29/18 17:46	108-10-1	
Acetone	**<12.2**	ug/kg	73.2	12.2	1	01/29/18 12:00	01/29/18 17:46	67-64-1	
Benzene	**<0.81**	ug/kg	5.9	0.81	1	01/29/18 12:00	01/29/18 17:46	71-43-2	
Bromodichloromethane	**<0.92**	ug/kg	5.9	0.92	1	01/29/18 12:00	01/29/18 17:46	75-27-4	
Bromoform	**<3.8**	ug/kg	29.3	3.8	1	01/29/18 12:00	01/29/18 17:46	75-25-2	
Bromomethane	**<5.1**	ug/kg	29.3	5.1	1	01/29/18 12:00	01/29/18 17:46	74-83-9	
Carbon tetrachloride	**8.7**	ug/kg	5.9	0.81	1	01/29/18 12:00	01/29/18 17:46	56-23-5	
Chlorobenzene	**<0.88**	ug/kg	5.9	0.88	1	01/29/18 12:00	01/29/18 17:46	108-90-7	
Chloroethane	**<2.3**	ug/kg	14.6	2.3	1	01/29/18 12:00	01/29/18 17:46	75-00-3	
Chloroform	**10.6**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	67-66-3	
Chloromethane	**<2.6**	ug/kg	14.6	2.6	1	01/29/18 12:00	01/29/18 17:46	74-87-3	
Dibromochloromethane	**<0.30**	ug/kg	5.9	0.30	1	01/29/18 12:00	01/29/18 17:46	124-48-1	
Dichlorodifluoromethane	**<5.6**	ug/kg	14.6	5.6	1	01/29/18 12:00	01/29/18 17:46	75-71-8	
Ethylbenzene	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	100-41-4	
Hexachloro-1,3-butadiene	**<3.8**	ug/kg	14.6	3.8	1	01/29/18 12:00	01/29/18 17:46	87-68-3	
Methyl-tert-butyl ether	**<0.87**	ug/kg	5.9	0.87	1	01/29/18 12:00	01/29/18 17:46	1634-04-4	
Methylene Chloride	**<3.3**	ug/kg	29.3	3.3	1	01/29/18 12:00	01/29/18 17:46	75-09-2	
Naphthalene	**<2.1**	ug/kg	14.6	2.1	1	01/29/18 12:00	01/29/18 17:46	91-20-3	
Styrene	**<0.62**	ug/kg	5.9	0.62	1	01/29/18 12:00	01/29/18 17:46	100-42-5	
Tetrachloroethene	**<0.76**	ug/kg	5.9	0.76	1	01/29/18 12:00	01/29/18 17:46	127-18-4	
Tetrahydrofuran	**<13.4**	ug/kg	58.6	13.4	1	01/29/18 12:00	01/29/18 17:46	109-99-9	
Toluene	**<1.6**	ug/kg	5.9	1.6	1	01/29/18 12:00	01/29/18 17:46	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.9	0.16	1	01/29/18 12:00	01/29/18 17:46	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.6	2.4	1	01/29/18 12:00	01/29/18 17:46	75-69-4	
Vinyl acetate	**<2.8**	ug/kg	14.6	2.8	1	01/29/18 12:00	01/29/18 17:46	108-05-4	
Vinyl chloride	**<1.4**	ug/kg	5.9	1.4	1	01/29/18 12:00	01/29/18 17:46	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-15 **Lab ID: 10418534007** Collected: 01/24/18 12:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<1.0**	ug/kg	5.9	1.0	1	01/29/18 12:00	01/29/18 17:46	156-59-2	
cis-1,3-Dichloropropene	**<2.8**	ug/kg	5.9	2.8	1	01/29/18 12:00	01/29/18 17:46	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.7	1.5	1	01/29/18 12:00	01/29/18 17:46	179601-23-1	
o-Xylene	**<0.70**	ug/kg	5.9	0.70	1	01/29/18 12:00	01/29/18 17:46	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.9	1.0	1	01/29/18 12:00	01/29/18 17:46	156-60-5	
trans-1,3-Dichloropropene	**<1.1**	ug/kg	5.9	1.1	1	01/29/18 12:00	01/29/18 17:46	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%.	75-126		1	01/29/18 12:00	01/29/18 17:46	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	01/29/18 12:00	01/29/18 17:46	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-128		1	01/29/18 12:00	01/29/18 17:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-25 **Lab ID: 10418534008** Collected: 01/24/18 12:35 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**34.4**	%	0.10	0.10	1		01/29/18 08:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.0**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 18:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.72**	ug/kg	5.3	0.72	1	01/29/18 12:00	01/29/18 18:05	79-34-5	
1,1,2-Trichloroethane	**<0.92**	ug/kg	5.3	0.92	1	01/29/18 12:00	01/29/18 18:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.96**	ug/kg	5.3	0.96	1	01/29/18 12:00	01/29/18 18:05	76-13-1	
1,1-Dichloroethane	**<0.95**	ug/kg	5.3	0.95	1	01/29/18 12:00	01/29/18 18:05	75-34-3	
1,1-Dichloroethene	**<0.76**	ug/kg	5.3	0.76	1	01/29/18 12:00	01/29/18 18:05	75-35-4	
1,2,4-Trichlorobenzene	**<2.1**	ug/kg	5.3	2.1	1	01/29/18 12:00	01/29/18 18:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.26**	ug/kg	5.3	0.26	1	01/29/18 12:00	01/29/18 18:05	95-63-6	
1,2-Dibromoethane (EDB)	**<1.0**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 18:05	106-93-4	
1,2-Dichlorobenzene	**<0.84**	ug/kg	5.3	0.84	1	01/29/18 12:00	01/29/18 18:05	95-50-1	
1,2-Dichloroethane	**<0.94**	ug/kg	5.3	0.94	1	01/29/18 12:00	01/29/18 18:05	107-06-2	
1,3,5-Trimethylbenzene	**<0.64**	ug/kg	5.3	0.64	1	01/29/18 12:00	01/29/18 18:05	108-67-8	
1,3-Dichlorobenzene	**<0.69**	ug/kg	5.3	0.69	1	01/29/18 12:00	01/29/18 18:05	541-73-1	
1,4-Dichlorobenzene	**<0.77**	ug/kg	5.3	0.77	1	01/29/18 12:00	01/29/18 18:05	106-46-7	
2-Butanone (MEK)	**<4.1**	ug/kg	26.6	4.1	1	01/29/18 12:00	01/29/18 18:05	78-93-3	
2-Hexanone	**<3.1**	ug/kg	26.6	3.1	1	01/29/18 12:00	01/29/18 18:05	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.4**	ug/kg	26.6	3.4	1	01/29/18 12:00	01/29/18 18:05	108-10-1	
Acetone	**<11.1**	ug/kg	66.4	11.1	1	01/29/18 12:00	01/29/18 18:05	67-64-1	
Benzene	**<0.74**	ug/kg	5.3	0.74	1	01/29/18 12:00	01/29/18 18:05	71-43-2	
Bromodichloromethane	**<0.84**	ug/kg	5.3	0.84	1	01/29/18 12:00	01/29/18 18:05	75-27-4	
Bromoform	**<3.4**	ug/kg	26.6	3.4	1	01/29/18 12:00	01/29/18 18:05	75-25-2	
Bromomethane	**<4.6**	ug/kg	26.6	4.6	1	01/29/18 12:00	01/29/18 18:05	74-83-9	
Carbon tetrachloride	**7.6**	ug/kg	5.3	0.74	1	01/29/18 12:00	01/29/18 18:05	56-23-5	
Chlorobenzene	**<0.79**	ug/kg	5.3	0.79	1	01/29/18 12:00	01/29/18 18:05	108-90-7	
Chloroethane	**<2.1**	ug/kg	13.3	2.1	1	01/29/18 12:00	01/29/18 18:05	75-00-3	
Chloroform	**8.4**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 18:05	67-66-3	
Chloromethane	**<2.3**	ug/kg	13.3	2.3	1	01/29/18 12:00	01/29/18 18:05	74-87-3	
Dibromochloromethane	**<0.27**	ug/kg	5.3	0.27	1	01/29/18 12:00	01/29/18 18:05	124-48-1	
Dichlorodifluoromethane	**<5.0**	ug/kg	13.3	5.0	1	01/29/18 12:00	01/29/18 18:05	75-71-8	
Ethylbenzene	**<0.97**	ug/kg	5.3	0.97	1	01/29/18 12:00	01/29/18 18:05	100-41-4	
Hexachloro-1,3-butadiene	**<3.5**	ug/kg	13.3	3.5	1	01/29/18 12:00	01/29/18 18:05	87-68-3	
Methyl-tert-butyl ether	**<0.79**	ug/kg	5.3	0.79	1	01/29/18 12:00	01/29/18 18:05	1634-04-4	
Methylene Chloride	**<3.0**	ug/kg	26.6	3.0	1	01/29/18 12:00	01/29/18 18:05	75-09-2	
Naphthalene	**<1.9**	ug/kg	13.3	1.9	1	01/29/18 12:00	01/29/18 18:05	91-20-3	
Styrene	**<0.56**	ug/kg	5.3	0.56	1	01/29/18 12:00	01/29/18 18:05	100-42-5	
Tetrachloroethene	**<0.69**	ug/kg	5.3	0.69	1	01/29/18 12:00	01/29/18 18:05	127-18-4	
Tetrahydrofuran	**<12.1**	ug/kg	53.1	12.1	1	01/29/18 12:00	01/29/18 18:05	109-99-9	
Toluene	**<1.5**	ug/kg	5.3	1.5	1	01/29/18 12:00	01/29/18 18:05	108-88-3	
Trichloroethene	**<0.15**	ug/kg	5.3	0.15	1	01/29/18 12:00	01/29/18 18:05	79-01-6	
Trichlorofluoromethane	**<2.2**	ug/kg	13.3	2.2	1	01/29/18 12:00	01/29/18 18:05	75-69-4	
Vinyl acetate	**<2.6**	ug/kg	13.3	2.6	1	01/29/18 12:00	01/29/18 18:05	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.3	1.3	1	01/29/18 12:00	01/29/18 18:05	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-25 **Lab ID: 10418534008** Collected: 01/24/18 12:35 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.90**	ug/kg	5.3	0.90	1	01/29/18 12:00	01/29/18 18:05	156-59-2	
cis-1,3-Dichloropropene	**<2.5**	ug/kg	5.3	2.5	1	01/29/18 12:00	01/29/18 18:05	10061-01-5	
m&p-Xylene	**<1.4**	ug/kg	10.6	1.4	1	01/29/18 12:00	01/29/18 18:05	179601-23-1	
o-Xylene	**<0.64**	ug/kg	5.3	0.64	1	01/29/18 12:00	01/29/18 18:05	95-47-6	
trans-1,2-Dichloroethene	**<0.94**	ug/kg	5.3	0.94	1	01/29/18 12:00	01/29/18 18:05	156-60-5	
trans-1,3-Dichloropropene	**<0.97**	ug/kg	5.3	0.97	1	01/29/18 12:00	01/29/18 18:05	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-126		1	01/29/18 12:00	01/29/18 18:05	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	01/29/18 12:00	01/29/18 18:05	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	01/29/18 12:00	01/29/18 18:05	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-30 **Lab ID: 10418534009** Collected: 01/24/18 12:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**35.8**	%	0.10	0.10	1		01/29/18 08:54		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.6	1.1	1	02/06/18 15:10	02/06/18 18:07	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.76**	ug/kg	5.6	0.76	1	02/06/18 15:10	02/06/18 18:07	79-34-5	
1,1,2-Trichloroethane	**<0.97**	ug/kg	5.6	0.97	1	02/06/18 15:10	02/06/18 18:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/kg	5.6	1.0	1	02/06/18 15:10	02/06/18 18:07	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.6	1.0	1	02/06/18 15:10	02/06/18 18:07	75-34-3	
1,1-Dichloroethene	**<0.80**	ug/kg	5.6	0.80	1	02/06/18 15:10	02/06/18 18:07	75-35-4	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	5.6	2.3	1	02/06/18 15:10	02/06/18 18:07	120-82-1	
1,2,4-Trimethylbenzene	**<0.27**	ug/kg	5.6	0.27	1	02/06/18 15:10	02/06/18 18:07	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.6	1.1	1	02/06/18 15:10	02/06/18 18:07	106-93-4	
1,2-Dichlorobenzene	**<0.88**	ug/kg	5.6	0.88	1	02/06/18 15:10	02/06/18 18:07	95-50-1	
1,2-Dichloroethane	**<0.99**	ug/kg	5.6	0.99	1	02/06/18 15:10	02/06/18 18:07	107-06-2	
1,3,5-Trimethylbenzene	**<0.67**	ug/kg	5.6	0.67	1	02/06/18 15:10	02/06/18 18:07	108-67-8	
1,3-Dichlorobenzene	**<0.73**	ug/kg	5.6	0.73	1	02/06/18 15:10	02/06/18 18:07	541-73-1	
1,4-Dichlorobenzene	**<0.81**	ug/kg	5.6	0.81	1	02/06/18 15:10	02/06/18 18:07	106-46-7	
2-Butanone (MEK)	**<4.3**	ug/kg	28.0	4.3	1	02/06/18 15:10	02/06/18 18:07	78-93-3	
2-Hexanone	**<3.2**	ug/kg	28.0	3.2	1	02/06/18 15:10	02/06/18 18:07	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.6**	ug/kg	28.0	3.6	1	02/06/18 15:10	02/06/18 18:07	108-10-1	
Acetone	**<11.7**	ug/kg	70.0	11.7	1	02/06/18 15:10	02/06/18 18:07	67-64-1	
Benzene	**<0.78**	ug/kg	5.6	0.78	1	02/06/18 15:10	02/06/18 18:07	71-43-2	
Bromodichloromethane	**<0.88**	ug/kg	5.6	0.88	1	02/06/18 15:10	02/06/18 18:07	75-27-4	
Bromoform	**<3.6**	ug/kg	28.0	3.6	1	02/06/18 15:10	02/06/18 18:07	75-25-2	
Bromomethane	**<4.9**	ug/kg	28.0	4.9	1	02/06/18 15:10	02/06/18 18:07	74-83-9	
Carbon tetrachloride	**10.7**	ug/kg	5.6	0.78	1	02/06/18 15:10	02/06/18 18:07	56-23-5	
Chlorobenzene	**<0.84**	ug/kg	5.6	0.84	1	02/06/18 15:10	02/06/18 18:07	108-90-7	
Chloroethane	**<2.2**	ug/kg	14.0	2.2	1	02/06/18 15:10	02/06/18 18:07	75-00-3	
Chloroform	**10.2**	ug/kg	5.6	1.1	1	02/06/18 15:10	02/06/18 18:07	67-66-3	
Chloromethane	**<2.5**	ug/kg	14.0	2.5	1	02/06/18 15:10	02/06/18 18:07	74-87-3	
Dibromochloromethane	**<0.29**	ug/kg	5.6	0.29	1	02/06/18 15:10	02/06/18 18:07	124-48-1	
Dichlorodifluoromethane	**<5.3**	ug/kg	14.0	5.3	1	02/06/18 15:10	02/06/18 18:07	75-71-8	
Ethylbenzene	**<1.0**	ug/kg	5.6	1.0	1	02/06/18 15:10	02/06/18 18:07	100-41-4	
Hexachloro-1,3-butadiene	**<3.7**	ug/kg	14.0	3.7	1	02/06/18 15:10	02/06/18 18:07	87-68-3	
Methyl-tert-butyl ether	**<0.83**	ug/kg	5.6	0.83	1	02/06/18 15:10	02/06/18 18:07	1634-04-4	
Methylene Chloride	**<3.2**	ug/kg	28.0	3.2	1	02/06/18 15:10	02/06/18 18:07	75-09-2	
Naphthalene	**<2.0**	ug/kg	14.0	2.0	1	02/06/18 15:10	02/06/18 18:07	91-20-3	
Styrene	**<0.59**	ug/kg	5.6	0.59	1	02/06/18 15:10	02/06/18 18:07	100-42-5	
Tetrachloroethene	**<0.73**	ug/kg	5.6	0.73	1	02/06/18 15:10	02/06/18 18:07	127-18-4	
Tetrahydrofuran	**<12.8**	ug/kg	56.0	12.8	1	02/06/18 15:10	02/06/18 18:07	109-99-9	
Toluene	**<1.5**	ug/kg	5.6	1.5	1	02/06/18 15:10	02/06/18 18:07	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.6	0.16	1	02/06/18 15:10	02/06/18 18:07	79-01-6	
Trichlorofluoromethane	**<2.3**	ug/kg	14.0	2.3	1	02/06/18 15:10	02/06/18 18:07	75-69-4	
Vinyl acetate	**<2.7**	ug/kg	14.0	2.7	1	02/06/18 15:10	02/06/18 18:07	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.6	1.3	1	02/06/18 15:10	02/06/18 18:07	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB102B-30 **Lab ID: 10418534009** Collected: 01/24/18 12:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.95**	ug/kg	5.6	0.95	1	02/06/18 15:10	02/06/18 18:07	156-59-2	
cis-1,3-Dichloropropene	**<2.6**	ug/kg	5.6	2.6	1	02/06/18 15:10	02/06/18 18:07	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.2	1.5	1	02/06/18 15:10	02/06/18 18:07	179601-23-1	
o-Xylene	**<0.67**	ug/kg	5.6	0.67	1	02/06/18 15:10	02/06/18 18:07	95-47-6	
trans-1,2-Dichloroethene	**<0.99**	ug/kg	5.6	0.99	1	02/06/18 15:10	02/06/18 18:07	156-60-5	
trans-1,3-Dichloropropene	**<1.0**	ug/kg	5.6	1.0	1	02/06/18 15:10	02/06/18 18:07	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	02/06/18 15:10	02/06/18 18:07	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	02/06/18 15:10	02/06/18 18:07	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-128		1	02/06/18 15:10	02/06/18 18:07	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report

Pace Project No.: 10418534

Sample: SB103B-5 **Lab ID: 10418534010** Collected: 01/25/18 09:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**15.6**	%	0.10	0.10	1		01/29/18 08:54		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.73**	ug/kg	3.9	0.73	1	01/29/18 12:00	01/29/18 18:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.53**	ug/kg	3.9	0.53	1	01/29/18 12:00	01/29/18 18:42	79-34-5	
1,1,2-Trichloroethane	**<0.67**	ug/kg	3.9	0.67	1	01/29/18 12:00	01/29/18 18:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.70**	ug/kg	3.9	0.70	1	01/29/18 12:00	01/29/18 18:42	76-13-1	
1,1-Dichloroethane	**<0.70**	ug/kg	3.9	0.70	1	01/29/18 12:00	01/29/18 18:42	75-34-3	
1,1-Dichloroethene	**<0.55**	ug/kg	3.9	0.55	1	01/29/18 12:00	01/29/18 18:42	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	3.9	1.6	1	01/29/18 12:00	01/29/18 18:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	3.9	0.19	1	01/29/18 12:00	01/29/18 18:42	95-63-6	
1,2-Dibromoethane (EDB)	**<0.76**	ug/kg	3.9	0.76	1	01/29/18 12:00	01/29/18 18:42	106-93-4	
1,2-Dichlorobenzene	**<0.61**	ug/kg	3.9	0.61	1	01/29/18 12:00	01/29/18 18:42	95-50-1	
1,2-Dichloroethane	**<0.69**	ug/kg	3.9	0.69	1	01/29/18 12:00	01/29/18 18:42	107-06-2	
1,3,5-Trimethylbenzene	**<0.47**	ug/kg	3.9	0.47	1	01/29/18 12:00	01/29/18 18:42	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/kg	3.9	0.50	1	01/29/18 12:00	01/29/18 18:42	541-73-1	
1,4-Dichlorobenzene	**<0.56**	ug/kg	3.9	0.56	1	01/29/18 12:00	01/29/18 18:42	106-46-7	
2-Butanone (MEK)	**<3.0**	ug/kg	19.4	3.0	1	01/29/18 12:00	01/29/18 18:42	78-93-3	
2-Hexanone	**<2.3**	ug/kg	19.4	2.3	1	01/29/18 12:00	01/29/18 18:42	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/kg	19.4	2.5	1	01/29/18 12:00	01/29/18 18:42	108-10-1	
Acetone	**<8.1**	ug/kg	48.5	8.1	1	01/29/18 12:00	01/29/18 18:42	67-64-1	
Benzene	**<0.54**	ug/kg	3.9	0.54	1	01/29/18 12:00	01/29/18 18:42	71-43-2	
Bromodichloromethane	**<0.61**	ug/kg	3.9	0.61	1	01/29/18 12:00	01/29/18 18:42	75-27-4	
Bromoform	**<2.5**	ug/kg	19.4	2.5	1	01/29/18 12:00	01/29/18 18:42	75-25-2	
Bromomethane	**<3.4**	ug/kg	19.4	3.4	1	01/29/18 12:00	01/29/18 18:42	74-83-9	
Carbon tetrachloride	**2.8J**	ug/kg	3.9	0.54	1	01/29/18 12:00	01/29/18 18:42	56-23-5	
Chlorobenzene	**<0.58**	ug/kg	3.9	0.58	1	01/29/18 12:00	01/29/18 18:42	108-90-7	
Chloroethane	**<1.5**	ug/kg	9.7	1.5	1	01/29/18 12:00	01/29/18 18:42	75-00-3	
Chloroform	**6.1**	ug/kg	3.9	0.76	1	01/29/18 12:00	01/29/18 18:42	67-66-3	
Chloromethane	**<1.7**	ug/kg	9.7	1.7	1	01/29/18 12:00	01/29/18 18:42	74-87-3	
Dibromochloromethane	**<0.20**	ug/kg	3.9	0.20	1	01/29/18 12:00	01/29/18 18:42	124-48-1	
Dichlorodifluoromethane	**<3.7**	ug/kg	9.7	3.7	1	01/29/18 12:00	01/29/18 18:42	75-71-8	
Ethylbenzene	**<0.71**	ug/kg	3.9	0.71	1	01/29/18 12:00	01/29/18 18:42	100-41-4	
Hexachloro-1,3-butadiene	**<2.5**	ug/kg	9.7	2.5	1	01/29/18 12:00	01/29/18 18:42	87-68-3	
Methyl-tert-butyl ether	**<0.58**	ug/kg	3.9	0.58	1	01/29/18 12:00	01/29/18 18:42	1634-04-4	
Methylene Chloride	**<2.2**	ug/kg	19.4	2.2	1	01/29/18 12:00	01/29/18 18:42	75-09-2	
Naphthalene	**<1.4**	ug/kg	9.7	1.4	1	01/29/18 12:00	01/29/18 18:42	91-20-3	
Styrene	**<0.41**	ug/kg	3.9	0.41	1	01/29/18 12:00	01/29/18 18:42	100-42-5	
Tetrachloroethene	**<0.50**	ug/kg	3.9	0.50	1	01/29/18 12:00	01/29/18 18:42	127-18-4	
Tetrahydrofuran	**<8.9**	ug/kg	38.8	8.9	1	01/29/18 12:00	01/29/18 18:42	109-99-9	
Toluene	**<1.1**	ug/kg	3.9	1.1	1	01/29/18 12:00	01/29/18 18:42	108-88-3	
Trichloroethene	**<0.11**	ug/kg	3.9	0.11	1	01/29/18 12:00	01/29/18 18:42	79-01-6	
Trichlorofluoromethane	**<1.6**	ug/kg	9.7	1.6	1	01/29/18 12:00	01/29/18 18:42	75-69-4	
Vinyl acetate	**<1.9**	ug/kg	9.7	1.9	1	01/29/18 12:00	01/29/18 18:42	108-05-4	
Vinyl chloride	**<0.92**	ug/kg	3.9	0.92	1	01/29/18 12:00	01/29/18 18:42	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-5 **Lab ID: 10418534010** Collected: 01/25/18 09:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.66**	ug/kg	3.9	0.66	1	01/29/18 12:00	01/29/18 18:42	156-59-2	
cis-1,3-Dichloropropene	**<1.8**	ug/kg	3.9	1.8	1	01/29/18 12:00	01/29/18 18:42	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	7.8	1.0	1	01/29/18 12:00	01/29/18 18:42	179601-23-1	
o-Xylene	**<0.46**	ug/kg	3.9	0.46	1	01/29/18 12:00	01/29/18 18:42	95-47-6	
trans-1,2-Dichloroethene	**<0.69**	ug/kg	3.9	0.69	1	01/29/18 12:00	01/29/18 18:42	156-60-5	
trans-1,3-Dichloropropene	**<0.71**	ug/kg	3.9	0.71	1	01/29/18 12:00	01/29/18 18:42	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-126		1	01/29/18 12:00	01/29/18 18:42	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	01/29/18 12:00	01/29/18 18:42	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	01/29/18 12:00	01/29/18 18:42	460-00-4	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-15 **Lab ID: 10418534011** Collected: 01/25/18 09:55 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**31.5**	%	0.10	0.10	1		01/29/18 08:55		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.0**	ug/kg	5.5	1.0	1	02/06/18 15:10	02/06/18 18:26	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.74**	ug/kg	5.5	0.74	1	02/06/18 15:10	02/06/18 18:26	79-34-5	
1,1,2-Trichloroethane	**<0.95**	ug/kg	5.5	0.95	1	02/06/18 15:10	02/06/18 18:26	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.99**	ug/kg	5.5	0.99	1	02/06/18 15:10	02/06/18 18:26	76-13-1	
1,1-Dichloroethane	**<0.99**	ug/kg	5.5	0.99	1	02/06/18 15:10	02/06/18 18:26	75-34-3	
1,1-Dichloroethene	**<0.79**	ug/kg	5.5	0.79	1	02/06/18 15:10	02/06/18 18:26	75-35-4	
1,2,4-Trichlorobenzene	**<2.2**	ug/kg	5.5	2.2	1	02/06/18 15:10	02/06/18 18:26	120-82-1	
1,2,4-Trimethylbenzene	**<0.27**	ug/kg	5.5	0.27	1	02/06/18 15:10	02/06/18 18:26	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.5	1.1	1	02/06/18 15:10	02/06/18 18:26	106-93-4	
1,2-Dichlorobenzene	**<0.87**	ug/kg	5.5	0.87	1	02/06/18 15:10	02/06/18 18:26	95-50-1	
1,2-Dichloroethane	**<0.97**	ug/kg	5.5	0.97	1	02/06/18 15:10	02/06/18 18:26	107-06-2	
1,3,5-Trimethylbenzene	**<0.66**	ug/kg	5.5	0.66	1	02/06/18 15:10	02/06/18 18:26	108-67-8	
1,3-Dichlorobenzene	**<0.71**	ug/kg	5.5	0.71	1	02/06/18 15:10	02/06/18 18:26	541-73-1	
1,4-Dichlorobenzene	**<0.79**	ug/kg	5.5	0.79	1	02/06/18 15:10	02/06/18 18:26	106-46-7	
2-Butanone (MEK)	**<4.2**	ug/kg	27.5	4.2	1	02/06/18 15:10	02/06/18 18:26	78-93-3	
2-Hexanone	**<3.2**	ug/kg	27.5	3.2	1	02/06/18 15:10	02/06/18 18:26	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.6**	ug/kg	27.5	3.6	1	02/06/18 15:10	02/06/18 18:26	108-10-1	
Acetone	**<11.4**	ug/kg	68.7	11.4	1	02/06/18 15:10	02/06/18 18:26	67-64-1	
Benzene	**<0.76**	ug/kg	5.5	0.76	1	02/06/18 15:10	02/06/18 18:26	71-43-2	
Bromodichloromethane	**<0.87**	ug/kg	5.5	0.87	1	02/06/18 15:10	02/06/18 18:26	75-27-4	
Bromoform	**<3.5**	ug/kg	27.5	3.5	1	02/06/18 15:10	02/06/18 18:26	75-25-2	
Bromomethane	**<4.8**	ug/kg	27.5	4.8	1	02/06/18 15:10	02/06/18 18:26	74-83-9	
Carbon tetrachloride	**4.0J**	ug/kg	5.5	0.76	1	02/06/18 15:10	02/06/18 18:26	56-23-5	
Chlorobenzene	**<0.82**	ug/kg	5.5	0.82	1	02/06/18 15:10	02/06/18 18:26	108-90-7	
Chloroethane	**<2.1**	ug/kg	13.7	2.1	1	02/06/18 15:10	02/06/18 18:26	75-00-3	
Chloroform	**4.0J**	ug/kg	5.5	1.1	1	02/06/18 15:10	02/06/18 18:26	67-66-3	
Chloromethane	**<2.4**	ug/kg	13.7	2.4	1	02/06/18 15:10	02/06/18 18:26	74-87-3	
Dibromochloromethane	**<0.28**	ug/kg	5.5	0.28	1	02/06/18 15:10	02/06/18 18:26	124-48-1	
Dichlorodifluoromethane	**<5.2**	ug/kg	13.7	5.2	1	02/06/18 15:10	02/06/18 18:26	75-71-8	
Ethylbenzene	**<1.0**	ug/kg	5.5	1.0	1	02/06/18 15:10	02/06/18 18:26	100-41-4	
Hexachloro-1,3-butadiene	**<3.6**	ug/kg	13.7	3.6	1	02/06/18 15:10	02/06/18 18:26	87-68-3	
Methyl-tert-butyl ether	**<0.82**	ug/kg	5.5	0.82	1	02/06/18 15:10	02/06/18 18:26	1634-04-4	
Methylene Chloride	**<3.1**	ug/kg	27.5	3.1	1	02/06/18 15:10	02/06/18 18:26	75-09-2	
Naphthalene	**<2.0**	ug/kg	13.7	2.0	1	02/06/18 15:10	02/06/18 18:26	91-20-3	
Styrene	**<0.58**	ug/kg	5.5	0.58	1	02/06/18 15:10	02/06/18 18:26	100-42-5	
Tetrachloroethene	**<0.71**	ug/kg	5.5	0.71	1	02/06/18 15:10	02/06/18 18:26	127-18-4	
Tetrahydrofuran	**<12.6**	ug/kg	55.0	12.6	1	02/06/18 15:10	02/06/18 18:26	109-99-9	
Toluene	**<1.5**	ug/kg	5.5	1.5	1	02/06/18 15:10	02/06/18 18:26	108-88-3	
Trichloroethene	**<0.15**	ug/kg	5.5	0.15	1	02/06/18 15:10	02/06/18 18:26	79-01-6	
Trichlorofluoromethane	**<2.3**	ug/kg	13.7	2.3	1	02/06/18 15:10	02/06/18 18:26	75-69-4	
Vinyl acetate	**<2.7**	ug/kg	13.7	2.7	1	02/06/18 15:10	02/06/18 18:26	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.5	1.3	1	02/06/18 15:10	02/06/18 18:26	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-15 **Lab ID: 10418534011** Collected: 01/25/18 09:55 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.93**	ug/kg	5.5	0.93	1	02/06/18 15:10	02/06/18 18:26	156-59-2	
cis-1,3-Dichloropropene	**<2.6**	ug/kg	5.5	2.6	1	02/06/18 15:10	02/06/18 18:26	10061-01-5	
m&p-Xylene	**<1.4**	ug/kg	11.0	1.4	1	02/06/18 15:10	02/06/18 18:26	179601-23-1	
o-Xylene	**<0.66**	ug/kg	5.5	0.66	1	02/06/18 15:10	02/06/18 18:26	95-47-6	
trans-1,2-Dichloroethene	**<0.97**	ug/kg	5.5	0.97	1	02/06/18 15:10	02/06/18 18:26	156-60-5	
trans-1,3-Dichloropropene	**<1.0**	ug/kg	5.5	1.0	1	02/06/18 15:10	02/06/18 18:26	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	02/06/18 15:10	02/06/18 18:26	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	02/06/18 15:10	02/06/18 18:26	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-128		1	02/06/18 15:10	02/06/18 18:26	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-22 **Lab ID: 10418534012** Collected: 01/25/18 10:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**35.8**	%	0.10	0.10	1		01/29/18 08:55		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.0**	ug/kg	5.4	1.0	1	01/29/18 12:00	01/29/18 19:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.73**	ug/kg	5.4	0.73	1	01/29/18 12:00	01/29/18 19:19	79-34-5	
1,1,2-Trichloroethane	**<0.93**	ug/kg	5.4	0.93	1	01/29/18 12:00	01/29/18 19:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.97**	ug/kg	5.4	0.97	1	01/29/18 12:00	01/29/18 19:19	76-13-1	
1,1-Dichloroethane	**<0.96**	ug/kg	5.4	0.96	1	01/29/18 12:00	01/29/18 19:19	75-34-3	
1,1-Dichloroethene	**<0.77**	ug/kg	5.4	0.77	1	01/29/18 12:00	01/29/18 19:19	75-35-4	
1,2,4-Trichlorobenzene	**<2.2**	ug/kg	5.4	2.2	1	01/29/18 12:00	01/29/18 19:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.26**	ug/kg	5.4	0.26	1	01/29/18 12:00	01/29/18 19:19	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.4	1.1	1	01/29/18 12:00	01/29/18 19:19	106-93-4	
1,2-Dichlorobenzene	**<0.85**	ug/kg	5.4	0.85	1	01/29/18 12:00	01/29/18 19:19	95-50-1	
1,2-Dichloroethane	**<0.95**	ug/kg	5.4	0.95	1	01/29/18 12:00	01/29/18 19:19	107-06-2	
1,3,5-Trimethylbenzene	**<0.65**	ug/kg	5.4	0.65	1	01/29/18 12:00	01/29/18 19:19	108-67-8	
1,3-Dichlorobenzene	**<0.70**	ug/kg	5.4	0.70	1	01/29/18 12:00	01/29/18 19:19	541-73-1	
1,4-Dichlorobenzene	**<0.78**	ug/kg	5.4	0.78	1	01/29/18 12:00	01/29/18 19:19	106-46-7	
2-Butanone (MEK)	**<4.1**	ug/kg	26.9	4.1	1	01/29/18 12:00	01/29/18 19:19	78-93-3	
2-Hexanone	**<3.1**	ug/kg	26.9	3.1	1	01/29/18 12:00	01/29/18 19:19	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.5**	ug/kg	26.9	3.5	1	01/29/18 12:00	01/29/18 19:19	108-10-1	
Acetone	**<11.2**	ug/kg	67.3	11.2	1	01/29/18 12:00	01/29/18 19:19	67-64-1	
Benzene	**<0.75**	ug/kg	5.4	0.75	1	01/29/18 12:00	01/29/18 19:19	71-43-2	
Bromodichloromethane	**<0.85**	ug/kg	5.4	0.85	1	01/29/18 12:00	01/29/18 19:19	75-27-4	
Bromoform	**<3.5**	ug/kg	26.9	3.5	1	01/29/18 12:00	01/29/18 19:19	75-25-2	
Bromomethane	**<4.7**	ug/kg	26.9	4.7	1	01/29/18 12:00	01/29/18 19:19	74-83-9	
Carbon tetrachloride	**2.8J**	ug/kg	5.4	0.75	1	01/29/18 12:00	01/29/18 19:19	56-23-5	
Chlorobenzene	**<0.80**	ug/kg	5.4	0.80	1	01/29/18 12:00	01/29/18 19:19	108-90-7	
Chloroethane	**<2.1**	ug/kg	13.5	2.1	1	01/29/18 12:00	01/29/18 19:19	75-00-3	
Chloroform	**1.8J**	ug/kg	5.4	1.1	1	01/29/18 12:00	01/29/18 19:19	67-66-3	
Chloromethane	**<2.4**	ug/kg	13.5	2.4	1	01/29/18 12:00	01/29/18 19:19	74-87-3	
Dibromochloromethane	**<0.27**	ug/kg	5.4	0.27	1	01/29/18 12:00	01/29/18 19:19	124-48-1	
Dichlorodifluoromethane	**<5.1**	ug/kg	13.5	5.1	1	01/29/18 12:00	01/29/18 19:19	75-71-8	
Ethylbenzene	**<0.99**	ug/kg	5.4	0.99	1	01/29/18 12:00	01/29/18 19:19	100-41-4	
Hexachloro-1,3-butadiene	**<3.5**	ug/kg	13.5	3.5	1	01/29/18 12:00	01/29/18 19:19	87-68-3	
Methyl-tert-butyl ether	**<0.80**	ug/kg	5.4	0.80	1	01/29/18 12:00	01/29/18 19:19	1634-04-4	
Methylene Chloride	**<3.1**	ug/kg	26.9	3.1	1	01/29/18 12:00	01/29/18 19:19	75-09-2	
Naphthalene	**<1.9**	ug/kg	13.5	1.9	1	01/29/18 12:00	01/29/18 19:19	91-20-3	
Styrene	**<0.57**	ug/kg	5.4	0.57	1	01/29/18 12:00	01/29/18 19:19	100-42-5	
Tetrachloroethene	**<0.70**	ug/kg	5.4	0.70	1	01/29/18 12:00	01/29/18 19:19	127-18-4	
Tetrahydrofuran	**<12.3**	ug/kg	53.8	12.3	1	01/29/18 12:00	01/29/18 19:19	109-99-9	
Toluene	**<1.5**	ug/kg	5.4	1.5	1	01/29/18 12:00	01/29/18 19:19	108-88-3	
Trichloroethene	**<0.15**	ug/kg	5.4	0.15	1	01/29/18 12:00	01/29/18 19:19	79-01-6	
Trichlorofluoromethane	**<2.2**	ug/kg	13.5	2.2	1	01/29/18 12:00	01/29/18 19:19	75-69-4	
Vinyl acetate	**<2.6**	ug/kg	13.5	2.6	1	01/29/18 12:00	01/29/18 19:19	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.4	1.3	1	01/29/18 12:00	01/29/18 19:19	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-22 **Lab ID: 10418534012** Collected: 01/25/18 10:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.92**	ug/kg	5.4	0.92	1	01/29/18 12:00	01/29/18 19:19	156-59-2	
cis-1,3-Dichloropropene	**<2.5**	ug/kg	5.4	2.5	1	01/29/18 12:00	01/29/18 19:19	10061-01-5	
m&p-Xylene	**<1.4**	ug/kg	10.8	1.4	1	01/29/18 12:00	01/29/18 19:19	179601-23-1	
o-Xylene	**<0.64**	ug/kg	5.4	0.64	1	01/29/18 12:00	01/29/18 19:19	95-47-6	
trans-1,2-Dichloroethene	**<0.95**	ug/kg	5.4	0.95	1	01/29/18 12:00	01/29/18 19:19	156-60-5	
trans-1,3-Dichloropropene	**<0.99**	ug/kg	5.4	0.99	1	01/29/18 12:00	01/29/18 19:19	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-126		1	01/29/18 12:00	01/29/18 19:19	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	01/29/18 12:00	01/29/18 19:19	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	01/29/18 12:00	01/29/18 19:19	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-27 **Lab ID: 10418534013** Collected: 01/25/18 10:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**36.8**	%	0.10	0.10	1		01/29/18 08:55		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.2**	ug/kg	6.5	1.2	1	02/02/18 10:00	02/02/18 18:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.88**	ug/kg	6.5	0.88	1	02/02/18 10:00	02/02/18 18:16	79-34-5	
1,1,2-Trichloroethane	**<1.1**	ug/kg	6.5	1.1	1	02/02/18 10:00	02/02/18 18:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.2**	ug/kg	6.5	1.2	1	02/02/18 10:00	02/02/18 18:16	76-13-1	
1,1-Dichloroethane	**<1.2**	ug/kg	6.5	1.2	1	02/02/18 10:00	02/02/18 18:16	75-34-3	
1,1-Dichloroethene	**<0.93**	ug/kg	6.5	0.93	1	02/02/18 10:00	02/02/18 18:16	75-35-4	
1,2,4-Trichlorobenzene	**<2.6**	ug/kg	6.5	2.6	1	02/02/18 10:00	02/02/18 18:16	120-82-1	
1,2,4-Trimethylbenzene	**0.60J**	ug/kg	6.5	0.32	1	02/02/18 10:00	02/02/18 18:16	95-63-6	
1,2-Dibromoethane (EDB)	**<1.3**	ug/kg	6.5	1.3	1	02/02/18 10:00	02/02/18 18:16	106-93-4	
1,2-Dichlorobenzene	**<1.0**	ug/kg	6.5	1.0	1	02/02/18 10:00	02/02/18 18:16	95-50-1	
1,2-Dichloroethane	**<1.1**	ug/kg	6.5	1.1	1	02/02/18 10:00	02/02/18 18:16	107-06-2	
1,3,5-Trimethylbenzene	**<0.78**	ug/kg	6.5	0.78	1	02/02/18 10:00	02/02/18 18:16	108-67-8	
1,3-Dichlorobenzene	**<0.84**	ug/kg	6.5	0.84	1	02/02/18 10:00	02/02/18 18:16	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/kg	6.5	0.94	1	02/02/18 10:00	02/02/18 18:16	106-46-7	
2-Butanone (MEK)	**<5.0**	ug/kg	32.5	5.0	1	02/02/18 10:00	02/02/18 18:16	78-93-3	
2-Hexanone	**<3.8**	ug/kg	32.5	3.8	1	02/02/18 10:00	02/02/18 18:16	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<4.2**	ug/kg	32.5	4.2	1	02/02/18 10:00	02/02/18 18:16	108-10-1	
Acetone	**<13.5**	ug/kg	81.2	13.5	1	02/02/18 10:00	02/02/18 18:16	67-64-1	
Benzene	**<0.90**	ug/kg	6.5	0.90	1	02/02/18 10:00	02/02/18 18:16	71-43-2	
Bromodichloromethane	**<1.0**	ug/kg	6.5	1.0	1	02/02/18 10:00	02/02/18 18:16	75-27-4	
Bromoform	**<4.2**	ug/kg	32.5	4.2	1	02/02/18 10:00	02/02/18 18:16	75-25-2	
Bromomethane	**<5.7**	ug/kg	32.5	5.7	1	02/02/18 10:00	02/02/18 18:16	74-83-9	
Carbon tetrachloride	**7.2**	ug/kg	6.5	0.90	1	02/02/18 10:00	02/02/18 18:16	56-23-5	C0
Chlorobenzene	**<0.97**	ug/kg	6.5	0.97	1	02/02/18 10:00	02/02/18 18:16	108-90-7	
Chloroethane	**<2.5**	ug/kg	16.2	2.5	1	02/02/18 10:00	02/02/18 18:16	75-00-3	
Chloroform	**3.8J**	ug/kg	6.5	1.3	1	02/02/18 10:00	02/02/18 18:16	67-66-3	C0
Chloromethane	**<2.9**	ug/kg	16.2	2.9	1	02/02/18 10:00	02/02/18 18:16	74-87-3	
Dibromochloromethane	**<0.33**	ug/kg	6.5	0.33	1	02/02/18 10:00	02/02/18 18:16	124-48-1	
Dichlorodifluoromethane	**<6.2**	ug/kg	16.2	6.2	1	02/02/18 10:00	02/02/18 18:16	75-71-8	
Ethylbenzene	**<1.2**	ug/kg	6.5	1.2	1	02/02/18 10:00	02/02/18 18:16	100-41-4	
Hexachloro-1,3-butadiene	**<4.2**	ug/kg	16.2	4.2	1	02/02/18 10:00	02/02/18 18:16	87-68-3	
Methyl-tert-butyl ether	**<0.96**	ug/kg	6.5	0.96	1	02/02/18 10:00	02/02/18 18:16	1634-04-4	
Methylene Chloride	**<3.7**	ug/kg	32.5	3.7	1	02/02/18 10:00	02/02/18 18:16	75-09-2	
Naphthalene	**<2.3**	ug/kg	16.2	2.3	1	02/02/18 10:00	02/02/18 18:16	91-20-3	
Styrene	**<0.69**	ug/kg	6.5	0.69	1	02/02/18 10:00	02/02/18 18:16	100-42-5	
Tetrachloroethene	**<0.84**	ug/kg	6.5	0.84	1	02/02/18 10:00	02/02/18 18:16	127-18-4	
Tetrahydrofuran	**<14.8**	ug/kg	65.0	14.8	1	02/02/18 10:00	02/02/18 18:16	109-99-9	
Toluene	**<1.8**	ug/kg	6.5	1.8	1	02/02/18 10:00	02/02/18 18:16	108-88-3	
Trichloroethene	**<0.18**	ug/kg	6.5	0.18	1	02/02/18 10:00	02/02/18 18:16	79-01-6	
Trichlorofluoromethane	**<2.7**	ug/kg	16.2	2.7	1	02/02/18 10:00	02/02/18 18:16	75-69-4	
Vinyl acetate	**<3.1**	ug/kg	16.2	3.1	1	02/02/18 10:00	02/02/18 18:16	108-05-4	
Vinyl chloride	**<1.5**	ug/kg	6.5	1.5	1	02/02/18 10:00	02/02/18 18:16	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-27 **Lab ID: 10418534013** Collected: 01/25/18 10:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<1.1**	ug/kg	6.5	1.1	1	02/02/18 10:00	02/02/18 18:16	156-59-2	
cis-1,3-Dichloropropene	**<3.1**	ug/kg	6.5	3.1	1	02/02/18 10:00	02/02/18 18:16	10061-01-5	
m&p-Xylene	**<1.7**	ug/kg	13.0	1.7	1	02/02/18 10:00	02/02/18 18:16	179601-23-1	
o-Xylene	**<0.78**	ug/kg	6.5	0.78	1	02/02/18 10:00	02/02/18 18:16	95-47-6	
trans-1,2-Dichloroethene	**<1.1**	ug/kg	6.5	1.1	1	02/02/18 10:00	02/02/18 18:16	156-60-5	
trans-1,3-Dichloropropene	**<1.2**	ug/kg	6.5	1.2	1	02/02/18 10:00	02/02/18 18:16	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	65	%.	75-126		1	02/02/18 10:00	02/02/18 18:16	17060-07-0	S0
Toluene-d8 (S)	104	%.	75-125		1	02/02/18 10:00	02/02/18 18:16	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-128		1	02/02/18 10:00	02/02/18 18:16	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-27-FD **Lab ID: 10418534014** Collected: 01/25/18 10:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**37.2**	%	0.10	0.10	1		01/29/18 08:55		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 18:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.77**	ug/kg	5.7	0.77	1	02/02/18 10:00	02/02/18 18:35	79-34-5	
1,1,2-Trichloroethane	**<0.99**	ug/kg	5.7	0.99	1	02/02/18 10:00	02/02/18 18:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	75-34-3	
1,1-Dichloroethene	**<0.81**	ug/kg	5.7	0.81	1	02/02/18 10:00	02/02/18 18:35	75-35-4	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	5.7	2.3	1	02/02/18 10:00	02/02/18 18:35	120-82-1	
1,2,4-Trimethylbenzene	**0.51J**	ug/kg	5.7	0.28	1	02/02/18 10:00	02/02/18 18:35	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 18:35	106-93-4	
1,2-Dichlorobenzene	**<0.90**	ug/kg	5.7	0.90	1	02/02/18 10:00	02/02/18 18:35	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	107-06-2	
1,3,5-Trimethylbenzene	**<0.68**	ug/kg	5.7	0.68	1	02/02/18 10:00	02/02/18 18:35	108-67-8	
1,3-Dichlorobenzene	**<0.74**	ug/kg	5.7	0.74	1	02/02/18 10:00	02/02/18 18:35	541-73-1	
1,4-Dichlorobenzene	**<0.82**	ug/kg	5.7	0.82	1	02/02/18 10:00	02/02/18 18:35	106-46-7	
2-Butanone (MEK)	**<4.4**	ug/kg	28.4	4.4	1	02/02/18 10:00	02/02/18 18:35	78-93-3	
2-Hexanone	**<3.3**	ug/kg	28.4	3.3	1	02/02/18 10:00	02/02/18 18:35	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.7**	ug/kg	28.4	3.7	1	02/02/18 10:00	02/02/18 18:35	108-10-1	
Acetone	**<11.8**	ug/kg	71.1	11.8	1	02/02/18 10:00	02/02/18 18:35	67-64-1	IO
Benzene	**<0.79**	ug/kg	5.7	0.79	1	02/02/18 10:00	02/02/18 18:35	71-43-2	
Bromodichloromethane	**<0.90**	ug/kg	5.7	0.90	1	02/02/18 10:00	02/02/18 18:35	75-27-4	
Bromoform	**<3.7**	ug/kg	28.4	3.7	1	02/02/18 10:00	02/02/18 18:35	75-25-2	
Bromomethane	**<5.0**	ug/kg	28.4	5.0	1	02/02/18 10:00	02/02/18 18:35	74-83-9	
Carbon tetrachloride	**10.6**	ug/kg	5.7	0.79	1	02/02/18 10:00	02/02/18 18:35	56-23-5	C0
Chlorobenzene	**<0.85**	ug/kg	5.7	0.85	1	02/02/18 10:00	02/02/18 18:35	108-90-7	
Chloroethane	**<2.2**	ug/kg	14.2	2.2	1	02/02/18 10:00	02/02/18 18:35	75-00-3	
Chloroform	**5.5J**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 18:35	67-66-3	C0
Chloromethane	**<2.5**	ug/kg	14.2	2.5	1	02/02/18 10:00	02/02/18 18:35	74-87-3	
Dibromochloromethane	**<0.29**	ug/kg	5.7	0.29	1	02/02/18 10:00	02/02/18 18:35	124-48-1	
Dichlorodifluoromethane	**<5.4**	ug/kg	14.2	5.4	1	02/02/18 10:00	02/02/18 18:35	75-71-8	
Ethylbenzene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	100-41-4	
Hexachloro-1,3-butadiene	**<3.7**	ug/kg	14.2	3.7	1	02/02/18 10:00	02/02/18 18:35	87-68-3	
Methyl-tert-butyl ether	**<0.84**	ug/kg	5.7	0.84	1	02/02/18 10:00	02/02/18 18:35	1634-04-4	
Methylene Chloride	**<3.2**	ug/kg	28.4	3.2	1	02/02/18 10:00	02/02/18 18:35	75-09-2	
Naphthalene	**<2.0**	ug/kg	14.2	2.0	1	02/02/18 10:00	02/02/18 18:35	91-20-3	
Styrene	**<0.60**	ug/kg	5.7	0.60	1	02/02/18 10:00	02/02/18 18:35	100-42-5	
Tetrachloroethene	**<0.74**	ug/kg	5.7	0.74	1	02/02/18 10:00	02/02/18 18:35	127-18-4	
Tetrahydrofuran	**<13.0**	ug/kg	56.9	13.0	1	02/02/18 10:00	02/02/18 18:35	109-99-9	IO
Toluene	**<1.6**	ug/kg	5.7	1.6	1	02/02/18 10:00	02/02/18 18:35	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.7	0.16	1	02/02/18 10:00	02/02/18 18:35	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.2	2.4	1	02/02/18 10:00	02/02/18 18:35	75-69-4	
Vinyl acetate	**<2.7**	ug/kg	14.2	2.7	1	02/02/18 10:00	02/02/18 18:35	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.7	1.3	1	02/02/18 10:00	02/02/18 18:35	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB103B-27-FD **Lab ID: 10418534014** Collected: 01/25/18 10:40 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.97**	ug/kg	5.7	0.97	1	02/02/18 10:00	02/02/18 18:35	156-59-2	
cis-1,3-Dichloropropene	**<2.7**	ug/kg	5.7	2.7	1	02/02/18 10:00	02/02/18 18:35	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.4	1.5	1	02/02/18 10:00	02/02/18 18:35	179601-23-1	
o-Xylene	**<0.68**	ug/kg	5.7	0.68	1	02/02/18 10:00	02/02/18 18:35	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	156-60-5	
trans-1,3-Dichloropropene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 18:35	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	48	%.	75-126		1	02/02/18 10:00	02/02/18 18:35	17060-07-0	S1
Toluene-d8 (S)	110	%.	75-125		1	02/02/18 10:00	02/02/18 18:35	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-128		1	02/02/18 10:00	02/02/18 18:35	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-5 **Lab ID: 10418534015** Collected: 01/25/18 11:20 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.4**	%	0.10	0.10	1		01/29/18 08:55		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.77**	ug/kg	4.1	0.77	1	02/02/18 10:00	02/02/18 18:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.55**	ug/kg	4.1	0.55	1	02/02/18 10:00	02/02/18 18:54	79-34-5	
1,1,2-Trichloroethane	**<0.71**	ug/kg	4.1	0.71	1	02/02/18 10:00	02/02/18 18:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.74**	ug/kg	4.1	0.74	1	02/02/18 10:00	02/02/18 18:54	76-13-1	
1,1-Dichloroethane	**<0.73**	ug/kg	4.1	0.73	1	02/02/18 10:00	02/02/18 18:54	75-34-3	
1,1-Dichloroethene	**<0.58**	ug/kg	4.1	0.58	1	02/02/18 10:00	02/02/18 18:54	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.1	1.6	1	02/02/18 10:00	02/02/18 18:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/kg	4.1	0.20	1	02/02/18 10:00	02/02/18 18:54	95-63-6	
1,2-Dibromoethane (EDB)	**<0.80**	ug/kg	4.1	0.80	1	02/02/18 10:00	02/02/18 18:54	106-93-4	
1,2-Dichlorobenzene	**<0.64**	ug/kg	4.1	0.64	1	02/02/18 10:00	02/02/18 18:54	95-50-1	
1,2-Dichloroethane	**<0.72**	ug/kg	4.1	0.72	1	02/02/18 10:00	02/02/18 18:54	107-06-2	
1,3,5-Trimethylbenzene	**<0.49**	ug/kg	4.1	0.49	1	02/02/18 10:00	02/02/18 18:54	108-67-8	
1,3-Dichlorobenzene	**<0.53**	ug/kg	4.1	0.53	1	02/02/18 10:00	02/02/18 18:54	541-73-1	
1,4-Dichlorobenzene	**<0.59**	ug/kg	4.1	0.59	1	02/02/18 10:00	02/02/18 18:54	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	20.4	3.1	1	02/02/18 10:00	02/02/18 18:54	78-93-3	
2-Hexanone	**<2.4**	ug/kg	20.4	2.4	1	02/02/18 10:00	02/02/18 18:54	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.4	2.6	1	02/02/18 10:00	02/02/18 18:54	108-10-1	
Acetone	**<8.5**	ug/kg	50.9	8.5	1	02/02/18 10:00	02/02/18 18:54	67-64-1	
Benzene	**<0.56**	ug/kg	4.1	0.56	1	02/02/18 10:00	02/02/18 18:54	71-43-2	
Bromodichloromethane	**<0.64**	ug/kg	4.1	0.64	1	02/02/18 10:00	02/02/18 18:54	75-27-4	
Bromoform	**<2.6**	ug/kg	20.4	2.6	1	02/02/18 10:00	02/02/18 18:54	75-25-2	
Bromomethane	**<3.6**	ug/kg	20.4	3.6	1	02/02/18 10:00	02/02/18 18:54	74-83-9	
Carbon tetrachloride	**<0.57**	ug/kg	4.1	0.57	1	02/02/18 10:00	02/02/18 18:54	56-23-5	
Chlorobenzene	**<0.61**	ug/kg	4.1	0.61	1	02/02/18 10:00	02/02/18 18:54	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.2	1.6	1	02/02/18 10:00	02/02/18 18:54	75-00-3	
Chloroform	**<0.80**	ug/kg	4.1	0.80	1	02/02/18 10:00	02/02/18 18:54	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.2	1.8	1	02/02/18 10:00	02/02/18 18:54	74-87-3	
Dibromochloromethane	**<0.21**	ug/kg	4.1	0.21	1	02/02/18 10:00	02/02/18 18:54	124-48-1	
Dichlorodifluoromethane	**<3.9**	ug/kg	10.2	3.9	1	02/02/18 10:00	02/02/18 18:54	75-71-8	
Ethylbenzene	**<0.75**	ug/kg	4.1	0.75	1	02/02/18 10:00	02/02/18 18:54	100-41-4	
Hexachloro-1,3-butadiene	**<2.7**	ug/kg	10.2	2.7	1	02/02/18 10:00	02/02/18 18:54	87-68-3	
Methyl-tert-butyl ether	**<0.61**	ug/kg	4.1	0.61	1	02/02/18 10:00	02/02/18 18:54	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.4	2.3	1	02/02/18 10:00	02/02/18 18:54	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.2	1.5	1	02/02/18 10:00	02/02/18 18:54	91-20-3	
Styrene	**<0.43**	ug/kg	4.1	0.43	1	02/02/18 10:00	02/02/18 18:54	100-42-5	
Tetrachloroethene	**<0.53**	ug/kg	4.1	0.53	1	02/02/18 10:00	02/02/18 18:54	127-18-4	
Tetrahydrofuran	**<9.3**	ug/kg	40.7	9.3	1	02/02/18 10:00	02/02/18 18:54	109-99-9	
Toluene	**<1.1**	ug/kg	4.1	1.1	1	02/02/18 10:00	02/02/18 18:54	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.1	0.11	1	02/02/18 10:00	02/02/18 18:54	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.2	1.7	1	02/02/18 10:00	02/02/18 18:54	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.2	2.0	1	02/02/18 10:00	02/02/18 18:54	108-05-4	
Vinyl chloride	**<0.96**	ug/kg	4.1	0.96	1	02/02/18 10:00	02/02/18 18:54	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-5 **Lab ID: 10418534015** Collected: 01/25/18 11:20 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.69**	ug/kg	4.1	0.69	1	02/02/18 10:00	02/02/18 18:54	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.1	1.9	1	02/02/18 10:00	02/02/18 18:54	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.1	1.1	1	02/02/18 10:00	02/02/18 18:54	179601-23-1	
o-Xylene	**<0.49**	ug/kg	4.1	0.49	1	02/02/18 10:00	02/02/18 18:54	95-47-6	
trans-1,2-Dichloroethene	**<0.72**	ug/kg	4.1	0.72	1	02/02/18 10:00	02/02/18 18:54	156-60-5	
trans-1,3-Dichloropropene	**<0.75**	ug/kg	4.1	0.75	1	02/02/18 10:00	02/02/18 18:54	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-126		1	02/02/18 10:00	02/02/18 18:54	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	02/02/18 10:00	02/02/18 18:54	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	02/02/18 10:00	02/02/18 18:54	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-15 **Lab ID: 10418534016** Collected: 01/25/18 12:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**34.5**	%	0.10	0.10	1		01/29/18 08:56		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 19:13	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.77**	ug/kg	5.7	0.77	1	02/02/18 10:00	02/02/18 19:13	79-34-5	
1,1,2-Trichloroethane	**<0.99**	ug/kg	5.7	0.99	1	02/02/18 10:00	02/02/18 19:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	75-34-3	
1,1-Dichloroethene	**<0.81**	ug/kg	5.7	0.81	1	02/02/18 10:00	02/02/18 19:13	75-35-4	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	5.7	2.3	1	02/02/18 10:00	02/02/18 19:13	120-82-1	
1,2,4-Trimethylbenzene	**0.42J**	ug/kg	5.7	0.28	1	02/02/18 10:00	02/02/18 19:13	95-63-6	B
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 19:13	106-93-4	
1,2-Dichlorobenzene	**<0.90**	ug/kg	5.7	0.90	1	02/02/18 10:00	02/02/18 19:13	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	107-06-2	
1,3,5-Trimethylbenzene	**<0.69**	ug/kg	5.7	0.69	1	02/02/18 10:00	02/02/18 19:13	108-67-8	
1,3-Dichlorobenzene	**<0.74**	ug/kg	5.7	0.74	1	02/02/18 10:00	02/02/18 19:13	541-73-1	
1,4-Dichlorobenzene	**<0.82**	ug/kg	5.7	0.82	1	02/02/18 10:00	02/02/18 19:13	106-46-7	
2-Butanone (MEK)	**<4.4**	ug/kg	28.5	4.4	1	02/02/18 10:00	02/02/18 19:13	78-93-3	
2-Hexanone	**<3.3**	ug/kg	28.5	3.3	1	02/02/18 10:00	02/02/18 19:13	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.7**	ug/kg	28.5	3.7	1	02/02/18 10:00	02/02/18 19:13	108-10-1	
Acetone	**<11.9**	ug/kg	71.2	11.9	1	02/02/18 10:00	02/02/18 19:13	67-64-1	
Benzene	**<0.79**	ug/kg	5.7	0.79	1	02/02/18 10:00	02/02/18 19:13	71-43-2	
Bromodichloromethane	**<0.90**	ug/kg	5.7	0.90	1	02/02/18 10:00	02/02/18 19:13	75-27-4	
Bromoform	**<3.7**	ug/kg	28.5	3.7	1	02/02/18 10:00	02/02/18 19:13	75-25-2	
Bromomethane	**<5.0**	ug/kg	28.5	5.0	1	02/02/18 10:00	02/02/18 19:13	74-83-9	
Carbon tetrachloride	**13.7**	ug/kg	5.7	0.79	1	02/02/18 10:00	02/02/18 19:13	56-23-5	
Chlorobenzene	**<0.85**	ug/kg	5.7	0.85	1	02/02/18 10:00	02/02/18 19:13	108-90-7	
Chloroethane	**<2.2**	ug/kg	14.2	2.2	1	02/02/18 10:00	02/02/18 19:13	75-00-3	
Chloroform	**5.1J**	ug/kg	5.7	1.1	1	02/02/18 10:00	02/02/18 19:13	67-66-3	B
Chloromethane	**<2.5**	ug/kg	14.2	2.5	1	02/02/18 10:00	02/02/18 19:13	74-87-3	
Dibromochloromethane	**<0.29**	ug/kg	5.7	0.29	1	02/02/18 10:00	02/02/18 19:13	124-48-1	
Dichlorodifluoromethane	**<5.4**	ug/kg	14.2	5.4	1	02/02/18 10:00	02/02/18 19:13	75-71-8	
Ethylbenzene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	100-41-4	
Hexachloro-1,3-butadiene	**<3.7**	ug/kg	14.2	3.7	1	02/02/18 10:00	02/02/18 19:13	87-68-3	
Methyl-tert-butyl ether	**<0.85**	ug/kg	5.7	0.85	1	02/02/18 10:00	02/02/18 19:13	1634-04-4	
Methylene Chloride	**<3.2**	ug/kg	28.5	3.2	1	02/02/18 10:00	02/02/18 19:13	75-09-2	
Naphthalene	**<2.1**	ug/kg	14.2	2.1	1	02/02/18 10:00	02/02/18 19:13	91-20-3	
Styrene	**<0.60**	ug/kg	5.7	0.60	1	02/02/18 10:00	02/02/18 19:13	100-42-5	
Tetrachloroethene	**<0.74**	ug/kg	5.7	0.74	1	02/02/18 10:00	02/02/18 19:13	127-18-4	
Tetrahydrofuran	**<13.0**	ug/kg	57.0	13.0	1	02/02/18 10:00	02/02/18 19:13	109-99-9	
Toluene	**<1.6**	ug/kg	5.7	1.6	1	02/02/18 10:00	02/02/18 19:13	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.7	0.16	1	02/02/18 10:00	02/02/18 19:13	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.2	2.4	1	02/02/18 10:00	02/02/18 19:13	75-69-4	
Vinyl acetate	**<2.7**	ug/kg	14.2	2.7	1	02/02/18 10:00	02/02/18 19:13	108-05-4	
Vinyl chloride	**<1.3**	ug/kg	5.7	1.3	1	02/02/18 10:00	02/02/18 19:13	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-15 **Lab ID: 10418534016** Collected: 01/25/18 12:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.97**	ug/kg	5.7	0.97	1	02/02/18 10:00	02/02/18 19:13	156-59-2	
cis-1,3-Dichloropropene	**<2.7**	ug/kg	5.7	2.7	1	02/02/18 10:00	02/02/18 19:13	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.4	1.5	1	02/02/18 10:00	02/02/18 19:13	179601-23-1	
o-Xylene	**<0.68**	ug/kg	5.7	0.68	1	02/02/18 10:00	02/02/18 19:13	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	156-60-5	
trans-1,3-Dichloropropene	**<1.0**	ug/kg	5.7	1.0	1	02/02/18 10:00	02/02/18 19:13	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	81	%.	75-126		1	02/02/18 10:00	02/02/18 19:13	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	02/02/18 10:00	02/02/18 19:13	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	02/02/18 10:00	02/02/18 19:13	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-22 **Lab ID: 10418534017** Collected: 01/25/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**30.9**	%	0.10	0.10	1		01/29/18 08:56		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.2**	ug/kg	6.2	1.2	1	02/02/18 10:00	02/02/18 19:32	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.85**	ug/kg	6.2	0.85	1	02/02/18 10:00	02/02/18 19:32	79-34-5	
1,1,2-Trichloroethane	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	76-13-1	
1,1-Dichloroethane	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	75-34-3	
1,1-Dichloroethene	**<0.89**	ug/kg	6.2	0.89	1	02/02/18 10:00	02/02/18 19:32	75-35-4	
1,2,4-Trichlorobenzene	**<2.5**	ug/kg	6.2	2.5	1	02/02/18 10:00	02/02/18 19:32	120-82-1	
1,2,4-Trimethylbenzene	**<0.30**	ug/kg	6.2	0.30	1	02/02/18 10:00	02/02/18 19:32	95-63-6	
1,2-Dibromoethane (EDB)	**<1.2**	ug/kg	6.2	1.2	1	02/02/18 10:00	02/02/18 19:32	106-93-4	
1,2-Dichlorobenzene	**<0.98**	ug/kg	6.2	0.98	1	02/02/18 10:00	02/02/18 19:32	95-50-1	
1,2-Dichloroethane	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	107-06-2	
1,3,5-Trimethylbenzene	**<0.75**	ug/kg	6.2	0.75	1	02/02/18 10:00	02/02/18 19:32	108-67-8	
1,3-Dichlorobenzene	**<0.81**	ug/kg	6.2	0.81	1	02/02/18 10:00	02/02/18 19:32	541-73-1	
1,4-Dichlorobenzene	**<0.90**	ug/kg	6.2	0.90	1	02/02/18 10:00	02/02/18 19:32	106-46-7	
2-Butanone (MEK)	**<4.8**	ug/kg	31.2	4.8	1	02/02/18 10:00	02/02/18 19:32	78-93-3	
2-Hexanone	**<3.6**	ug/kg	31.2	3.6	1	02/02/18 10:00	02/02/18 19:32	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<4.0**	ug/kg	31.2	4.0	1	02/02/18 10:00	02/02/18 19:32	108-10-1	
Acetone	**<13.0**	ug/kg	78.0	13.0	1	02/02/18 10:00	02/02/18 19:32	67-64-1	
Benzene	**<0.86**	ug/kg	6.2	0.86	1	02/02/18 10:00	02/02/18 19:32	71-43-2	
Bromodichloromethane	**<0.98**	ug/kg	6.2	0.98	1	02/02/18 10:00	02/02/18 19:32	75-27-4	
Bromoform	**<4.0**	ug/kg	31.2	4.0	1	02/02/18 10:00	02/02/18 19:32	75-25-2	
Bromomethane	**<5.4**	ug/kg	31.2	5.4	1	02/02/18 10:00	02/02/18 19:32	74-83-9	
Carbon tetrachloride	**4.5J**	ug/kg	6.2	0.87	1	02/02/18 10:00	02/02/18 19:32	56-23-5	
Chlorobenzene	**<0.93**	ug/kg	6.2	0.93	1	02/02/18 10:00	02/02/18 19:32	108-90-7	
Chloroethane	**<2.4**	ug/kg	15.6	2.4	1	02/02/18 10:00	02/02/18 19:32	75-00-3	
Chloroform	**4.1J**	ug/kg	6.2	1.2	1	02/02/18 10:00	02/02/18 19:32	67-66-3	
Chloromethane	**<2.7**	ug/kg	15.6	2.7	1	02/02/18 10:00	02/02/18 19:32	74-87-3	
Dibromochloromethane	**<0.32**	ug/kg	6.2	0.32	1	02/02/18 10:00	02/02/18 19:32	124-48-1	
Dichlorodifluoromethane	**<5.9**	ug/kg	15.6	5.9	1	02/02/18 10:00	02/02/18 19:32	75-71-8	
Ethylbenzene	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	100-41-4	
Hexachloro-1,3-butadiene	**<4.1**	ug/kg	15.6	4.1	1	02/02/18 10:00	02/02/18 19:32	87-68-3	
Methyl-tert-butyl ether	**<0.93**	ug/kg	6.2	0.93	1	02/02/18 10:00	02/02/18 19:32	1634-04-4	
Methylene Chloride	**<3.6**	ug/kg	31.2	3.6	1	02/02/18 10:00	02/02/18 19:32	75-09-2	
Naphthalene	**<2.2**	ug/kg	15.6	2.2	1	02/02/18 10:00	02/02/18 19:32	91-20-3	
Styrene	**<0.66**	ug/kg	6.2	0.66	1	02/02/18 10:00	02/02/18 19:32	100-42-5	
Tetrachloroethene	**<0.81**	ug/kg	6.2	0.81	1	02/02/18 10:00	02/02/18 19:32	127-18-4	
Tetrahydrofuran	**<14.3**	ug/kg	62.4	14.3	1	02/02/18 10:00	02/02/18 19:32	109-99-9	
Toluene	**<1.7**	ug/kg	6.2	1.7	1	02/02/18 10:00	02/02/18 19:32	108-88-3	
Trichloroethene	**<0.17**	ug/kg	6.2	0.17	1	02/02/18 10:00	02/02/18 19:32	79-01-6	
Trichlorofluoromethane	**<2.6**	ug/kg	15.6	2.6	1	02/02/18 10:00	02/02/18 19:32	75-69-4	
Vinyl acetate	**<3.0**	ug/kg	15.6	3.0	1	02/02/18 10:00	02/02/18 19:32	108-05-4	
Vinyl chloride	**<1.5**	ug/kg	6.2	1.5	1	02/02/18 10:00	02/02/18 19:32	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-22 **Lab ID: 10418534017** Collected: 01/25/18 12:25 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	156-59-2	
cis-1,3-Dichloropropene	**<2.9**	ug/kg	6.2	2.9	1	02/02/18 10:00	02/02/18 19:32	10061-01-5	
m&p-Xylene	**<1.6**	ug/kg	12.5	1.6	1	02/02/18 10:00	02/02/18 19:32	179601-23-1	
o-Xylene	**<0.75**	ug/kg	6.2	0.75	1	02/02/18 10:00	02/02/18 19:32	95-47-6	
trans-1,2-Dichloroethene	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	156-60-5	
trans-1,3-Dichloropropene	**<1.1**	ug/kg	6.2	1.1	1	02/02/18 10:00	02/02/18 19:32	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-126		1	02/02/18 10:00	02/02/18 19:32	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	02/02/18 10:00	02/02/18 19:32	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	02/02/18 10:00	02/02/18 19:32	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-27 **Lab ID: 10418534018** Collected: 01/25/18 12:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**30.6**	%	0.10	0.10	1		01/29/18 08:56		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.0**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 14:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.72**	ug/kg	5.3	0.72	1	01/29/18 12:00	01/29/18 14:30	79-34-5	
1,1,2-Trichloroethane	**<0.92**	ug/kg	5.3	0.92	1	01/29/18 12:00	01/29/18 14:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.96**	ug/kg	5.3	0.96	1	01/29/18 12:00	01/29/18 14:30	76-13-1	M1
1,1-Dichloroethane	**<0.95**	ug/kg	5.3	0.95	1	01/29/18 12:00	01/29/18 14:30	75-34-3	
1,1-Dichloroethene	**<0.76**	ug/kg	5.3	0.76	1	01/29/18 12:00	01/29/18 14:30	75-35-4	
1,2,4-Trichlorobenzene	**<2.1**	ug/kg	5.3	2.1	1	01/29/18 12:00	01/29/18 14:30	120-82-1	M1
1,2,4-Trimethylbenzene	**<0.26**	ug/kg	5.3	0.26	1	01/29/18 12:00	01/29/18 14:30	95-63-6	
1,2-Dibromoethane (EDB)	**<1.0**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 14:30	106-93-4	M1
1,2-Dichlorobenzene	**<0.84**	ug/kg	5.3	0.84	1	01/29/18 12:00	01/29/18 14:30	95-50-1	
1,2-Dichloroethane	**<0.94**	ug/kg	5.3	0.94	1	01/29/18 12:00	01/29/18 14:30	107-06-2	
1,3,5-Trimethylbenzene	**<0.64**	ug/kg	5.3	0.64	1	01/29/18 12:00	01/29/18 14:30	108-67-8	M1
1,3-Dichlorobenzene	**<0.69**	ug/kg	5.3	0.69	1	01/29/18 12:00	01/29/18 14:30	541-73-1	
1,4-Dichlorobenzene	**<0.77**	ug/kg	5.3	0.77	1	01/29/18 12:00	01/29/18 14:30	106-46-7	
2-Butanone (MEK)	**<4.1**	ug/kg	26.6	4.1	1	01/29/18 12:00	01/29/18 14:30	78-93-3	
2-Hexanone	**<3.1**	ug/kg	26.6	3.1	1	01/29/18 12:00	01/29/18 14:30	591-78-6	M1
4-Methyl-2-pentanone (MIBK)	**<3.4**	ug/kg	26.6	3.4	1	01/29/18 12:00	01/29/18 14:30	108-10-1	
Acetone	**<11.1**	ug/kg	66.5	11.1	1	01/29/18 12:00	01/29/18 14:30	67-64-1	M1
Benzene	**<0.74**	ug/kg	5.3	0.74	1	01/29/18 12:00	01/29/18 14:30	71-43-2	
Bromodichloromethane	**<0.84**	ug/kg	5.3	0.84	1	01/29/18 12:00	01/29/18 14:30	75-27-4	
Bromoform	**<3.4**	ug/kg	26.6	3.4	1	01/29/18 12:00	01/29/18 14:30	75-25-2	M1
Bromomethane	**<4.6**	ug/kg	26.6	4.6	1	01/29/18 12:00	01/29/18 14:30	74-83-9	
Carbon tetrachloride	**7.2**	ug/kg	5.3	0.74	1	01/29/18 12:00	01/29/18 14:30	56-23-5	
Chlorobenzene	**<0.79**	ug/kg	5.3	0.79	1	01/29/18 12:00	01/29/18 14:30	108-90-7	M1
Chloroethane	**<2.1**	ug/kg	13.3	2.1	1	01/29/18 12:00	01/29/18 14:30	75-00-3	
Chloroform	**3.6J**	ug/kg	5.3	1.0	1	01/29/18 12:00	01/29/18 14:30	67-66-3	
Chloromethane	**<2.3**	ug/kg	13.3	2.3	1	01/29/18 12:00	01/29/18 14:30	74-87-3	
Dibromochloromethane	**<0.27**	ug/kg	5.3	0.27	1	01/29/18 12:00	01/29/18 14:30	124-48-1	M1
Dichlorodifluoromethane	**<5.0**	ug/kg	13.3	5.0	1	01/29/18 12:00	01/29/18 14:30	75-71-8	
Ethylbenzene	**<0.97**	ug/kg	5.3	0.97	1	01/29/18 12:00	01/29/18 14:30	100-41-4	M1
Hexachloro-1,3-butadiene	**<3.5**	ug/kg	13.3	3.5	1	01/29/18 12:00	01/29/18 14:30	87-68-3	M1
Methyl-tert-butyl ether	**<0.79**	ug/kg	5.3	0.79	1	01/29/18 12:00	01/29/18 14:30	1634-04-4	
Methylene Chloride	**<3.0**	ug/kg	26.6	3.0	1	01/29/18 12:00	01/29/18 14:30	75-09-2	
Naphthalene	**<1.9**	ug/kg	13.3	1.9	1	01/29/18 12:00	01/29/18 14:30	91-20-3	M1
Styrene	**<0.56**	ug/kg	5.3	0.56	1	01/29/18 12:00	01/29/18 14:30	100-42-5	M1
Tetrachloroethene	**<0.69**	ug/kg	5.3	0.69	1	01/29/18 12:00	01/29/18 14:30	127-18-4	M1
Tetrahydrofuran	**<12.2**	ug/kg	53.2	12.2	1	01/29/18 12:00	01/29/18 14:30	109-99-9	M1
Toluene	**<1.5**	ug/kg	5.3	1.5	1	01/29/18 12:00	01/29/18 14:30	108-88-3	M1
Trichloroethene	**<0.15**	ug/kg	5.3	0.15	1	01/29/18 12:00	01/29/18 14:30	79-01-6	M1
Trichlorofluoromethane	**<2.2**	ug/kg	13.3	2.2	1	01/29/18 12:00	01/29/18 14:30	75-69-4	
Vinyl acetate	**<2.6**	ug/kg	13.3	2.6	1	01/29/18 12:00	01/29/18 14:30	108-05-4	M1
Vinyl chloride	**<1.3**	ug/kg	5.3	1.3	1	01/29/18 12:00	01/29/18 14:30	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: SB104B-27 **Lab ID: 10418534018** Collected: 01/25/18 12:30 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.90**	ug/kg	5.3	0.90	1	01/29/18 12:00	01/29/18 14:30	156-59-2	
cis-1,3-Dichloropropene	**<2.5**	ug/kg	5.3	2.5	1	01/29/18 12:00	01/29/18 14:30	10061-01-5	M1
m&p-Xylene	**<1.4**	ug/kg	10.6	1.4	1	01/29/18 12:00	01/29/18 14:30	179601-23-1	
o-Xylene	**<0.64**	ug/kg	5.3	0.64	1	01/29/18 12:00	01/29/18 14:30	95-47-6	
trans-1,2-Dichloroethene	**<0.94**	ug/kg	5.3	0.94	1	01/29/18 12:00	01/29/18 14:30	156-60-5	
trans-1,3-Dichloropropene	**<0.98**	ug/kg	5.3	0.98	1	01/29/18 12:00	01/29/18 14:30	10061-02-6	M1
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%.	75-126		1	01/29/18 12:00	01/29/18 14:30	17060-07-0	
Toluene-d8 (S)	108	%.	75-125		1	01/29/18 12:00	01/29/18 14:30	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	01/29/18 12:00	01/29/18 14:30	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: WC-012518 **Lab ID: 10418534019** Collected: 01/25/18 17:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050								
Arsenic	**<1.9**	mg/kg	7.3	1.9	5	01/29/18 04:47	01/29/18 15:26	7440-38-2	D3,M1
Barium	**406**	mg/kg	3.6	0.20	5	01/29/18 04:47	01/29/18 15:26	7440-39-3	P6
Cadmium	**<0.11**	mg/kg	1.1	0.11	5	01/29/18 04:47	01/29/18 15:26	7440-43-9	D3
Chromium	**10.1**	mg/kg	3.6	0.46	5	01/29/18 04:47	01/29/18 15:26	7440-47-3	
Lead	**5.6**	mg/kg	3.6	0.82	5	01/29/18 04:47	01/29/18 15:26	7439-92-1	
Selenium	**<3.1**	mg/kg	7.3	3.1	5	01/29/18 04:47	01/29/18 15:26	7782-49-2	D3,M1
Silver	**<0.28**	mg/kg	3.6	0.28	5	01/29/18 04:47	01/29/18 15:26	7440-22-4	D3
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.047**	mg/kg	0.029	0.014	1	01/29/18 04:48	01/29/18 14:01	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**31.9**	%	0.10	0.10	1		01/29/18 08:56		
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
Acenaphthene	**<79.3**	ug/kg	484	79.3	1	01/29/18 21:55	01/30/18 13:39	83-32-9	
Acenaphthylene	**<66.4**	ug/kg	484	66.4	1	01/29/18 21:55	01/30/18 13:39	208-96-8	
Anthracene	**<69.8**	ug/kg	484	69.8	1	01/29/18 21:55	01/30/18 13:39	120-12-7	
Benzo(a)anthracene	**<56.3**	ug/kg	484	56.3	1	01/29/18 21:55	01/30/18 13:39	56-55-3	
Benzo(a)pyrene	**<54.8**	ug/kg	484	54.8	1	01/29/18 21:55	01/30/18 13:39	50-32-8	
Benzo(b)fluoranthene	**<58.7**	ug/kg	484	58.7	1	01/29/18 21:55	01/30/18 13:39	205-99-2	
Benzo(g,h,i)perylene	**<41.9**	ug/kg	484	41.9	1	01/29/18 21:55	01/30/18 13:39	191-24-2	
Benzo(k)fluoranthene	**<58.7**	ug/kg	484	58.7	1	01/29/18 21:55	01/30/18 13:39	207-08-9	
4-Bromophenylphenyl ether	**<81.7**	ug/kg	484	81.7	1	01/29/18 21:55	01/30/18 13:39	101-55-3	
Butylbenzylphthalate	**<107**	ug/kg	484	107	1	01/29/18 21:55	01/30/18 13:39	85-68-7	
Carbazole	**<65.1**	ug/kg	484	65.1	1	01/29/18 21:55	01/30/18 13:39	86-74-8	
4-Chloro-3-methylphenol	**<67.2**	ug/kg	484	67.2	1	01/29/18 21:55	01/30/18 13:39	59-50-7	
4-Chloroaniline	**<136**	ug/kg	484	136	1	01/29/18 21:55	01/30/18 13:39	106-47-8	
bis(2-Chloroethoxy)methane	**<94.0**	ug/kg	484	94.0	1	01/29/18 21:55	01/30/18 13:39	111-91-1	
bis(2-Chloroethyl) ether	**<106**	ug/kg	484	106	1	01/29/18 21:55	01/30/18 13:39	111-44-4	
bis(2-Chloroisopropyl) ether	**<112**	ug/kg	484	112	1	01/29/18 21:55	01/30/18 13:39	108-60-1	
2-Chloronaphthalene	**<68.8**	ug/kg	484	68.8	1	01/29/18 21:55	01/30/18 13:39	91-58-7	
2-Chlorophenol	**<96.3**	ug/kg	484	96.3	1	01/29/18 21:55	01/30/18 13:39	95-57-8	
4-Chlorophenylphenyl ether	**<66.3**	ug/kg	484	66.3	1	01/29/18 21:55	01/30/18 13:39	7005-72-3	
Chrysene	**<48.7**	ug/kg	484	48.7	1	01/29/18 21:55	01/30/18 13:39	218-01-9	
Dibenz(a,h)anthracene	**<50.0**	ug/kg	484	50.0	1	01/29/18 21:55	01/30/18 13:39	53-70-3	
Dibenzofuran	**<70.4**	ug/kg	484	70.4	1	01/29/18 21:55	01/30/18 13:39	132-64-9	
1,2-Dichlorobenzene	**<91.5**	ug/kg	484	91.5	1	01/29/18 21:55	01/30/18 13:39	95-50-1	
1,3-Dichlorobenzene	**<90.3**	ug/kg	484	90.3	1	01/29/18 21:55	01/30/18 13:39	541-73-1	
1,4-Dichlorobenzene	**<88.3**	ug/kg	484	88.3	1	01/29/18 21:55	01/30/18 13:39	106-46-7	
3,3'-Dichlorobenzidine	**<116**	ug/kg	484	116	1	01/29/18 21:55	01/30/18 13:39	91-94-1	
2,4-Dichlorophenol	**<91.4**	ug/kg	484	91.4	1	01/29/18 21:55	01/30/18 13:39	120-83-2	
Diethylphthalate	**<57.5**	ug/kg	484	57.5	1	01/29/18 21:55	01/30/18 13:39	84-66-2	
2,4-Dimethylphenol	**<182**	ug/kg	484	182	1	01/29/18 21:55	01/30/18 13:39	105-67-9	
Dimethylphthalate	**<74.6**	ug/kg	484	74.6	1	01/29/18 21:55	01/30/18 13:39	131-11-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: WC-012518 **Lab ID: 10418534019** Collected: 01/25/18 17:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
Di-n-butylphthalate	**<66.3**	ug/kg	484	66.3	1	01/29/18 21:55	01/30/18 13:39	84-74-2	
4,6-Dinitro-2-methylphenol	**<195**	ug/kg	2490	195	1	01/29/18 21:55	01/30/18 13:39	534-52-1	
2,4-Dinitrophenol	**<109**	ug/kg	484	109	1	01/29/18 21:55	01/30/18 13:39	51-28-5	
2,4-Dinitrotoluene	**<65.6**	ug/kg	484	65.6	1	01/29/18 21:55	01/30/18 13:39	121-14-2	
2,6-Dinitrotoluene	**<67.6**	ug/kg	484	67.6	1	01/29/18 21:55	01/30/18 13:39	606-20-2	
Di-n-octylphthalate	**<148**	ug/kg	484	148	1	01/29/18 21:55	01/30/18 13:39	117-84-0	
1,2-Diphenylhydrazine	**<87.5**	ug/kg	484	87.5	1	01/29/18 21:55	01/30/18 13:39	122-66-7	
bis(2-Ethylhexyl)phthalate	**<124**	ug/kg	484	124	1	01/29/18 21:55	01/30/18 13:39	117-81-7	
Fluoranthene	**<51.8**	ug/kg	484	51.8	1	01/29/18 21:55	01/30/18 13:39	206-44-0	
Fluorene	**<67.6**	ug/kg	484	67.6	1	01/29/18 21:55	01/30/18 13:39	86-73-7	
Hexachloro-1,3-butadiene	**<112**	ug/kg	484	112	1	01/29/18 21:55	01/30/18 13:39	87-68-3	
Hexachlorobenzene	**<62.6**	ug/kg	484	62.6	1	01/29/18 21:55	01/30/18 13:39	118-74-1	
Hexachloroethane	**<99.1**	ug/kg	484	99.1	1	01/29/18 21:55	01/30/18 13:39	67-72-1	
Indeno(1,2,3-cd)pyrene	**<56.5**	ug/kg	484	56.5	1	01/29/18 21:55	01/30/18 13:39	193-39-5	
Isophorone	**<111**	ug/kg	484	111	1	01/29/18 21:55	01/30/18 13:39	78-59-1	
1-Methylnaphthalene	**<76.1**	ug/kg	484	76.1	1	01/29/18 21:55	01/30/18 13:39	90-12-0	
2-Methylnaphthalene	**<75.1**	ug/kg	484	75.1	1	01/29/18 21:55	01/30/18 13:39	91-57-6	
2-Methylphenol(o-Cresol)	**<122**	ug/kg	484	122	1	01/29/18 21:55	01/30/18 13:39	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<109**	ug/kg	968	109	1	01/29/18 21:55	01/30/18 13:39		
Naphthalene	**<92.2**	ug/kg	484	92.2	1	01/29/18 21:55	01/30/18 13:39	91-20-3	
2-Nitroaniline	**<107**	ug/kg	484	107	1	01/29/18 21:55	01/30/18 13:39	88-74-4	
3-Nitroaniline	**<119**	ug/kg	484	119	1	01/29/18 21:55	01/30/18 13:39	99-09-2	
4-Nitroaniline	**<86.4**	ug/kg	484	86.4	1	01/29/18 21:55	01/30/18 13:39	100-01-6	
Nitrobenzene	**<97.4**	ug/kg	484	97.4	1	01/29/18 21:55	01/30/18 13:39	98-95-3	
2-Nitrophenol	**<91.2**	ug/kg	484	91.2	1	01/29/18 21:55	01/30/18 13:39	88-75-5	
4-Nitrophenol	**<140**	ug/kg	484	140	1	01/29/18 21:55	01/30/18 13:39	100-02-7	
N-Nitrosodimethylamine	**<127**	ug/kg	484	127	1	01/29/18 21:55	01/30/18 13:39	62-75-9	
N-Nitroso-di-n-propylamine	**<148**	ug/kg	484	148	1	01/29/18 21:55	01/30/18 13:39	621-64-7	
N-Nitrosodiphenylamine	**<59.5**	ug/kg	484	59.5	1	01/29/18 21:55	01/30/18 13:39	86-30-6	
Pentachlorophenol	**<143**	ug/kg	983	143	1	01/29/18 21:55	01/30/18 13:39	87-86-5	
Phenanthrene	**<66.4**	ug/kg	484	66.4	1	01/29/18 21:55	01/30/18 13:39	85-01-8	
Phenol	**<93.7**	ug/kg	484	93.7	1	01/29/18 21:55	01/30/18 13:39	108-95-2	
Pyrene	**<51.0**	ug/kg	484	51.0	1	01/29/18 21:55	01/30/18 13:39	129-00-0	
1,2,4-Trichlorobenzene	**<94.0**	ug/kg	484	94.0	1	01/29/18 21:55	01/30/18 13:39	120-82-1	
2,4,5-Trichlorophenol	**<94.6**	ug/kg	484	94.6	1	01/29/18 21:55	01/30/18 13:39	95-95-4	
2,4,6-Trichlorophenol	**<68.8**	ug/kg	484	68.8	1	01/29/18 21:55	01/30/18 13:39	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	74	%.	43-125		1	01/29/18 21:55	01/30/18 13:39	4165-60-0	
2-Fluorobiphenyl (S)	75	%.	30-132		1	01/29/18 21:55	01/30/18 13:39	321-60-8	
p-Terphenyl-d14 (S)	88	%.	62-125		1	01/29/18 21:55	01/30/18 13:39	1718-51-0	
Phenol-d6 (S)	73	%.	48-125		1	01/29/18 21:55	01/30/18 13:39	13127-88-3	
2-Fluorophenol (S)	73	%.	40-125		1	01/29/18 21:55	01/30/18 13:39	367-12-4	
2,4,6-Tribromophenol (S)	87	%.	60-125		1	01/29/18 21:55	01/30/18 13:39	118-79-6	

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: WC-012518 **Lab ID: 10418534019** Collected: 01/25/18 17:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<17.1**	ug/kg	75.8	17.1	1	01/30/18 12:44	01/30/18 16:04	71-55-6	
1,1,2,2-Tetrachloroethane	**<34.4**	ug/kg	75.8	34.4	1	01/30/18 12:44	01/30/18 16:04	79-34-5	N2
1,1,2-Trichloroethane	**<20.6**	ug/kg	75.8	20.6	1	01/30/18 12:44	01/30/18 16:04	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<40.0**	ug/kg	303	40.0	1	01/30/18 12:44	01/30/18 16:04	76-13-1	
1,1-Dichloroethane	**<19.7**	ug/kg	75.8	19.7	1	01/30/18 12:44	01/30/18 16:04	75-34-3	
1,1-Dichloroethene	**<32.6**	ug/kg	303	32.6	1	01/30/18 12:44	01/30/18 16:04	75-35-4	
1,2,4-Trichlorobenzene	**<21.7**	ug/kg	75.8	21.7	1	01/30/18 12:44	01/30/18 16:04	120-82-1	
1,2,4-Trimethylbenzene	**<19.7**	ug/kg	75.8	19.7	1	01/30/18 12:44	01/30/18 16:04	95-63-6	
1,2-Dibromoethane (EDB)	**<30.2**	ug/kg	75.8	30.2	1	01/30/18 12:44	01/30/18 16:04	106-93-4	
1,2-Dichlorobenzene	**<16.5**	ug/kg	75.8	16.5	1	01/30/18 12:44	01/30/18 16:04	95-50-1	
1,2-Dichloroethane	**<27.8**	ug/kg	75.8	27.8	1	01/30/18 12:44	01/30/18 16:04	107-06-2	
1,3,5-Trimethylbenzene	**<14.7**	ug/kg	75.8	14.7	1	01/30/18 12:44	01/30/18 16:04	108-67-8	
1,3-Dichlorobenzene	**<25.8**	ug/kg	75.8	25.8	1	01/30/18 12:44	01/30/18 16:04	541-73-1	
1,4-Dichlorobenzene	**<27.6**	ug/kg	75.8	27.6	1	01/30/18 12:44	01/30/18 16:04	106-46-7	
2-Butanone (MEK)	**<136**	ug/kg	1520	136	1	01/30/18 12:44	01/30/18 16:04	78-93-3	
2-Hexanone	**<97.7**	ug/kg	379	97.7	1	01/30/18 12:44	01/30/18 16:04	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<100**	ug/kg	379	100	1	01/30/18 12:44	01/30/18 16:04	108-10-1	
Acetone	**<736**	ug/kg	1520	736	1	01/30/18 12:44	01/30/18 16:04	67-64-1	
Benzene	**<11.2**	ug/kg	30.3	11.2	1	01/30/18 12:44	01/30/18 16:04	71-43-2	
Bromodichloromethane	**<27.5**	ug/kg	75.8	27.5	1	01/30/18 12:44	01/30/18 16:04	75-27-4	
Bromoform	**<54.8**	ug/kg	758	54.8	1	01/30/18 12:44	01/30/18 16:04	75-25-2	
Bromomethane	**<80.9**	ug/kg	758	80.9	1	01/30/18 12:44	01/30/18 16:04	74-83-9	
Carbon tetrachloride	**<30.3**	ug/kg	303	30.3	1	01/30/18 12:44	01/30/18 16:04	56-23-5	
Chlorobenzene	**<22.6**	ug/kg	75.8	22.6	1	01/30/18 12:44	01/30/18 16:04	108-90-7	
Chloroethane	**<116**	ug/kg	758	116	1	01/30/18 12:44	01/30/18 16:04	75-00-3	
Chloroform	**<31.1**	ug/kg	75.8	31.1	1	01/30/18 12:44	01/30/18 16:04	67-66-3	
Chloromethane	**<49.1**	ug/kg	303	49.1	1	01/30/18 12:44	01/30/18 16:04	74-87-3	
Dibromochloromethane	**<75.8**	ug/kg	303	75.8	1	01/30/18 12:44	01/30/18 16:04	124-48-1	
Dichlorodifluoromethane	**<118**	ug/kg	303	118	1	01/30/18 12:44	01/30/18 16:04	75-71-8	
Ethylbenzene	**<22.0**	ug/kg	75.8	22.0	1	01/30/18 12:44	01/30/18 16:04	100-41-4	
Hexachloro-1,3-butadiene	**<78.3**	ug/kg	379	78.3	1	01/30/18 12:44	01/30/18 16:04	87-68-3	
Methyl-tert-butyl ether	**<23.7**	ug/kg	75.8	23.7	1	01/30/18 12:44	01/30/18 16:04	1634-04-4	
Methylene Chloride	**<39.1**	ug/kg	303	39.1	1	01/30/18 12:44	01/30/18 16:04	75-09-2	
Naphthalene	**<66.7**	ug/kg	303	66.7	1	01/30/18 12:44	01/30/18 16:04	91-20-3	
Styrene	**<20.5**	ug/kg	75.8	20.5	1	01/30/18 12:44	01/30/18 16:04	100-42-5	
Tetrachloroethene	**<31.7**	ug/kg	75.8	31.7	1	01/30/18 12:44	01/30/18 16:04	127-18-4	
Tetrahydrofuran	**<789**	ug/kg	3030	789	1	01/30/18 12:44	01/30/18 16:04	109-99-9	
Toluene	**23.2J**	ug/kg	75.8	21.5	1	01/30/18 12:44	01/30/18 16:04	108-88-3	
Trichloroethene	**<12.8**	ug/kg	75.8	12.8	1	01/30/18 12:44	01/30/18 16:04	79-01-6	N2
Trichlorofluoromethane	**<113**	ug/kg	303	113	1	01/30/18 12:44	01/30/18 16:04	75-69-4	
Vinyl acetate	**<96.2**	ug/kg	758	96.2	1	01/30/18 12:44	01/30/18 16:04	108-05-4	
Vinyl chloride	**<12.7**	ug/kg	30.3	12.7	1	01/30/18 12:44	01/30/18 16:04	75-01-4	
cis-1,2-Dichloroethene	**<13.7**	ug/kg	75.8	13.7	1	01/30/18 12:44	01/30/18 16:04	156-59-2	
cis-1,3-Dichloropropene	**<24.3**	ug/kg	75.8	24.3	1	01/30/18 12:44	01/30/18 16:04	10061-01-5	
m&p-Xylene	**<40.7**	ug/kg	152	40.7	1	01/30/18 12:44	01/30/18 16:04	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Sample: WC-012518 **Lab ID: 10418534019** Collected: 01/25/18 17:00 Received: 01/27/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<20.3**	ug/kg	75.8	20.3	1	01/30/18 12:44	01/30/18 16:04	95-47-6	
trans-1,2-Dichloroethene	**<30.9**	ug/kg	75.8	30.9	1	01/30/18 12:44	01/30/18 16:04	156-60-5	
trans-1,3-Dichloropropene	**<54.2**	ug/kg	75.8	54.2	1	01/30/18 12:44	01/30/18 16:04	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1	01/30/18 12:44	01/30/18 16:04	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	01/30/18 12:44	01/30/18 16:04	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	01/30/18 12:44	01/30/18 16:04	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520102 | Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B | Analysis Description: 7471B Mercury Solids
Associated Lab Samples: 10418534019

METHOD BLANK: 2824618 | Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0085	0.018	0.0085	01/29/18 13:45	

LABORATORY CONTROL SAMPLE: 2824619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.43	0.41	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824620 2824621

Parameter	Units	10418460001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.5	.52	0.48	0.50	93	94	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520097 | Analysis Method: EPA 6010C
QC Batch Method: EPA 3050 | Analysis Description: 6010C Solids
Associated Lab Samples: 10418534019

METHOD BLANK: 2824598 | Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.25	0.99	0.25	01/29/18 14:41	
Barium	mg/kg	<0.027	0.50	0.027	01/29/18 14:41	
Cadmium	mg/kg	<0.015	0.15	0.015	01/29/18 14:41	
Chromium	mg/kg	<0.063	0.50	0.063	01/29/18 14:41	
Lead	mg/kg	<0.11	0.50	0.11	01/29/18 14:41	
Selenium	mg/kg	<0.42	0.99	0.42	01/29/18 14:41	
Silver	mg/kg	<0.039	0.50	0.039	01/29/18 14:41	

LABORATORY CONTROL SAMPLE: 2824599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	46.7	46.6	100	80-120	
Barium	mg/kg	46.7	51.5	110	80-120	
Cadmium	mg/kg	46.7	47.2	101	80-120	
Chromium	mg/kg	46.7	50.7	109	80-120	
Lead	mg/kg	46.7	48.4	103	80-120	
Selenium	mg/kg	46.7	43.7	94	80-120	
Silver	mg/kg	23.4	23.3	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824600 2824601

Parameter	Units	10418534019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	<1.9	72	72.7	37.9	45.0	52	61	75-125	17	20	M1
Barium	mg/kg	406	72	72.7	464	413	81	10	75-125	12	20	P6
Cadmium	mg/kg	<0.11	72	72.7	70.6	69.4	98	95	75-125	2	20	
Chromium	mg/kg	10.1	72	72.7	85.7	85.4	105	104	75-125	0	20	
Lead	mg/kg	5.6	72	72.7	79.5	82.9	103	106	75-125	4	20	
Selenium	mg/kg	<3.1	72	72.7	21.6	25.6	30	35	75-125	17	20	M1
Silver	mg/kg	<0.28	36	36.4	35.9	34.9	99	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520155 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974

Associated Lab Samples: 10418534002, 10418534003, 10418534004, 10418534005, 10418534006, 10418534007, 10418534008, 10418534009, 10418534010, 10418534011, 10418534012, 10418534013, 10418534014, 10418534015, 10418534016, 10418534017, 10418534018, 10418534019

SAMPLE DUPLICATE: 2824736

Parameter	Units	10418534002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.3	19.1	1	30	

SAMPLE DUPLICATE: 2824737

Parameter	Units	10418534018 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	30.6	32.6	6	30	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520269 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10418534001, 10418534002, 10418534003, 10418534005, 10418534007, 10418534008, 10418534010, 10418534012, 10418534018

METHOD BLANK: 2825089 Matrix: Solid
Associated Lab Samples: 10418534001, 10418534002, 10418534003, 10418534005, 10418534007, 10418534008, 10418534010, 10418534012, 10418534018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	01/29/18 13:34	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	01/29/18 13:34	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	01/29/18 13:34	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	01/29/18 13:34	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	01/29/18 13:34	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	01/29/18 13:34	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	01/29/18 13:34	
1,2,4-Trimethylbenzene	ug/kg	<0.19	4.0	0.19	01/29/18 13:34	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	01/29/18 13:34	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	01/29/18 13:34	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	01/29/18 13:34	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	01/29/18 13:34	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	01/29/18 13:34	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	01/29/18 13:34	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	01/29/18 13:34	
2-Hexanone	ug/kg	<2.3	20.0	2.3	01/29/18 13:34	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	01/29/18 13:34	
Acetone	ug/kg	<8.3	50.0	8.3	01/29/18 13:34	MN
Benzene	ug/kg	<0.55	4.0	0.55	01/29/18 13:34	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	01/29/18 13:34	
Bromoform	ug/kg	<2.6	20.0	2.6	01/29/18 13:34	
Bromomethane	ug/kg	<3.5	20.0	3.5	01/29/18 13:34	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	01/29/18 13:34	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	01/29/18 13:34	
Chloroethane	ug/kg	<1.6	10.0	1.6	01/29/18 13:34	
Chloroform	ug/kg	<0.78	4.0	0.78	01/29/18 13:34	
Chloromethane	ug/kg	<1.8	10.0	1.8	01/29/18 13:34	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	01/29/18 13:34	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	01/29/18 13:34	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	01/29/18 13:34	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	01/29/18 13:34	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	01/29/18 13:34	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	01/29/18 13:34	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	01/29/18 13:34	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	01/29/18 13:34	
Methylene Chloride	ug/kg	<2.3	20.0	2.3	01/29/18 13:34	
Naphthalene	ug/kg	<1.4	10.0	1.4	01/29/18 13:34	
o-Xylene	ug/kg	<0.48	4.0	0.48	01/29/18 13:34	
Styrene	ug/kg	<0.42	4.0	0.42	01/29/18 13:34	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	01/29/18 13:34	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

METHOD BLANK: 2825089 Matrix: Solid

Associated Lab Samples: 10418534001, 10418534002, 10418534003, 10418534005, 10418534007, 10418534008, 10418534010, 10418534012, 10418534018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	01/29/18 13:34	
Toluene	ug/kg	<1.1	4.0	1.1	01/29/18 13:34	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	01/29/18 13:34	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	01/29/18 13:34	
Trichloroethene	ug/kg	<0.11	4.0	0.11	01/29/18 13:34	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	01/29/18 13:34	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	01/29/18 13:34	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	01/29/18 13:34	
1,2-Dichloroethane-d4 (S)	%.	83	75-126		01/29/18 13:34	
4-Bromofluorobenzene (S)	%.	99	75-128		01/29/18 13:34	
Toluene-d8 (S)	%.	107	75-125		01/29/18 13:34	

LABORATORY CONTROL SAMPLE & LCSD: 2825090 2825091

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	18.4	20.0	92	100	75-125	8	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	15.6	16.9	78	85	67-125	8	20	
1,1,2-Trichloroethane	ug/kg	20	18.2	20.2	91	101	75-125	10	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	20.6	22.1	103	111	70-125	7	20	
1,1-Dichloroethane	ug/kg	20	18.3	19.7	92	99	70-125	7	20	
1,1-Dichloroethene	ug/kg	20	20.3	22.3	102	111	67-125	9	20	
1,2,4-Trichlorobenzene	ug/kg	20	21.9	23.3	110	117	75-125	6	20	
1,2,4-Trimethylbenzene	ug/kg	20	20.6	21.2	103	106	75-125	3	20	
1,2-Dibromoethane (EDB)	ug/kg	20	18.7	19.7	93	99	75-125	5	20	
1,2-Dichlorobenzene	ug/kg	20	20.3	21.2	102	106	75-125	4	20	
1,2-Dichloroethane	ug/kg	20	15.5	16.9	78	84	74-125	8	20	
1,3,5-Trimethylbenzene	ug/kg	20	20.5	21.8	102	109	75-125	6	20	
1,3-Dichlorobenzene	ug/kg	20	21.0	21.5	105	107	75-125	2	20	
1,4-Dichlorobenzene	ug/kg	20	19.7	20.6	98	103	75-125	5	20	
2-Butanone (MEK)	ug/kg	100	71.8	72.6	72	73	56-134	1	20	
2-Hexanone	ug/kg	100	72.1	74.9	72	75	71-125	4	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	78.6	82.5	79	82	71-125	5	20	
Acetone	ug/kg	100	85.8	80.3	86	80	30-150	7	20	
Benzene	ug/kg	20	18.8	20.0	94	100	69-125	6	20	
Bromodichloromethane	ug/kg	20	17.1	18.6	86	93	75-125	8	20	
Bromoform	ug/kg	20	18.2J	18.7J	91	94	75-125		20	
Bromomethane	ug/kg	20	20.0J	20.0J	100	100	67-131		20	
Carbon tetrachloride	ug/kg	20	19.0	20.5	95	103	75-125	8	20	
Chlorobenzene	ug/kg	20	19.9	21.3	100	106	75-125	7	20	
Chloroethane	ug/kg	20	18.4	19.1	92	96	63-125	4	20	
Chloroform	ug/kg	20	17.2	18.2	86	91	75-125	6	20	
Chloromethane	ug/kg	20	19.3	19.0	96	95	30-150	1	20	
cis-1,2-Dichloroethene	ug/kg	20	19.1	19.8	95	99	72-125	4	20	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE & LCSD: 2825090 2825091

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
cis-1,3-Dichloropropene	ug/kg	20	18.9	20.6	95	103	73-125	8	20	
Dibromochloromethane	ug/kg	20	18.3	19.8	92	99	75-125	8	20	
Dichlorodifluoromethane	ug/kg	20	19.5	20.7	97	104	55-134	6	20	
Ethylbenzene	ug/kg	20	21.3	22.3	107	112	75-125	4	20	
Hexachloro-1,3-butadiene	ug/kg	20	23.1	24.7	116	124	75-125	7	20	
m&p-Xylene	ug/kg	40	39.6	41.6	99	104	75-125	5	20	
Methyl-tert-butyl ether	ug/kg	20	16.6	17.7	83	89	70-125	7	20	
Methylene Chloride	ug/kg	20	18.5J	18.6J	92	93	58-134		20	
Naphthalene	ug/kg	20	19.5	20.1	97	101	66-125	3	20	
o-Xylene	ug/kg	20	19.8	20.9	99	105	75-125	6	20	
Styrene	ug/kg	20	18.9	20.3	94	101	75-125	7	20	
Tetrachloroethene	ug/kg	20	22.4	23.4	112	117	72-125	4	20	
Tetrahydrofuran	ug/kg	200	207	219	104	110	36-146	5	20	
Toluene	ug/kg	20	20.9	23.1	104	116	75-125	10	20	
trans-1,2-Dichloroethene	ug/kg	20	18.7	19.8	94	99	69-125	6	20	
trans-1,3-Dichloropropene	ug/kg	20	18.9	20.1	94	101	75-125	6	20	
Trichloroethene	ug/kg	20	21.2	23.2	106	116	75-125	9	20	
Trichlorofluoromethane	ug/kg	20	20.5	22.3	102	111	72-127	8	20	
Vinyl acetate	ug/kg	20	15.5	15.9	78	79	69-125	2	20	
Vinyl chloride	ug/kg	20	19.8	20.3	99	102	67-127	3	20	
1,2-Dichloroethane-d4 (S)	%.				75	79	75-126			
4-Bromofluorobenzene (S)	%.				95	97	75-128			
Toluene-d8 (S)	%.				100	105	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2825092 2825093

Parameter	Units	10418534018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	<1.0	25.2	25.7	29.9	38.5	118	150	34-150	25	30	
1,1,2,2-Tetrachloroethane	ug/kg	<0.72	25.2	25.7	25.7	31.7	102	123	32-148	21	30	
1,1,2-Trichloroethane	ug/kg	<0.92	25.2	25.7	30.6	37.3	121	145	55-150	20	30	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.96	25.2	25.7	32.8	41.3	130	161	30-150	23	30	M1
1,1-Dichloroethane	ug/kg	<0.95	25.2	25.7	27.3	35.1	108	137	30-150	25	30	
1,1-Dichloroethene	ug/kg	<0.76	25.2	25.7	30.9	37.9	122	147	30-150	20	30	
1,2,4-Trichlorobenzene	ug/kg	<2.1	25.2	25.7	31.2	39.2	124	153	30-144	23	30	M1
1,2,4-Trimethylbenzene	ug/kg	<0.26	25.2	25.7	29.8	38.0	118	148	30-150	24	30	
1,2-Dibromoethane (EDB)	ug/kg	<1.0	25.2	25.7	31.1	38.4	123	150	46-148	21	30	M1
1,2-Dichlorobenzene	ug/kg	<0.84	25.2	25.7	29.2	37.3	116	145	30-147	24	30	
1,2-Dichloroethane	ug/kg	<0.94	25.2	25.7	26.7	34.0	106	132	40-150	24	30	
1,3,5-Trimethylbenzene	ug/kg	<0.64	25.2	25.7	30.7	38.7	122	151	30-150	23	30	M1
1,3-Dichlorobenzene	ug/kg	<0.69	25.2	25.7	30.3	38.2	120	149	30-150	23	30	
1,4-Dichlorobenzene	ug/kg	<0.77	25.2	25.7	28.3	35.8	112	139	30-149	23	30	
2-Butanone (MEK)	ug/kg	<4.1	126	128	130	161	103	126	30-150	21	30	
2-Hexanone	ug/kg	<3.1	126	128	134	173	106	135	70-130	25	30	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2825092 2825093

Parameter	Units	10418534018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Methyl-2-pentanone (MIBK)	ug/kg	<3.4	126	128	141	181	111	141	30-150	25	30	
Acetone	ug/kg	<11.1	126	128	288	381	229	296	30-150	28	30	IS,M1
Benzene	ug/kg	<0.74	25.2	25.7	27.4	34.8	109	136	39-150	24	30	
Bromodichloromethane	ug/kg	<0.84	25.2	25.7	28.6	36.3	113	141	41-150	24	30	
Bromoform	ug/kg	<3.4	25.2	25.7	30.4	39.5	120	154	34-150	26	30	M1
Bromomethane	ug/kg	<4.6	25.2	25.7	27.3	26.4	108	103	45-150	4	30	
Carbon tetrachloride	ug/kg	7.2	25.2	25.7	41.0	44.1	134	144	30-150	7	30	
Chlorobenzene	ug/kg	<0.79	25.2	25.7	30.2	37.5	120	146	56-143	22	30	M1
Chloroethane	ug/kg	<2.1	25.2	25.7	27.6	21.4	109	83	42-150	25	30	
Chloroform	ug/kg	3.6J	25.2	25.7	29.2	34.5	101	120	37-150	17	30	
Chloromethane	ug/kg	<2.3	25.2	25.7	26.7	23.2	106	90	31-150	14	30	
cis-1,2-Dichloroethene	ug/kg	<0.90	25.2	25.7	27.4	35.8	108	139	44-150	27	30	
cis-1,3-Dichloropropene	ug/kg	<2.5	25.2	25.7	28.4	35.9	113	140	49-133	23	30	M1
Dibromochloromethane	ug/kg	<0.27	25.2	25.7	30.7	38.9	121	151	46-150	24	30	M1
Dichlorodifluoromethane	ug/kg	<5.0	25.2	25.7	30.2	27.8	120	108	30-150	8	30	
Ethylbenzene	ug/kg	<0.97	25.2	25.7	31.4	39.5	124	154	46-148	23	30	M1
Hexachloro-1,3-butadiene	ug/kg	<3.5	25.2	25.7	36.5	44.0	144	171	30-150	19	30	M1
m&p-Xylene	ug/kg	<1.4	50.4	51.4	57.8	70.7	114	138	37-150	20	30	
Methyl-tert-butyl ether	ug/kg	<0.79	25.2	25.7	25.7	34.5	102	134	46-150	29	30	
Methylene Chloride	ug/kg	<3.0	25.2	25.7	24.4J	30.5	97	119	32-150		30	
Naphthalene	ug/kg	<1.9	25.2	25.7	30.9	38.5	122	150	30-125	22	30	M1
o-Xylene	ug/kg	<0.64	25.2	25.7	29.0	36.7	115	143	37-145	24	30	
Styrene	ug/kg	<0.56	25.2	25.7	28.1	35.6	112	139	43-136	23	30	M1
Tetrachloroethene	ug/kg	<0.69	25.2	25.7	34.5	43.2	137	168	33-150	22	30	M1
Tetrahydrofuran	ug/kg	<12.2	252	257	661	866	262	337	65-149	27	30	IS,M1
Toluene	ug/kg	<1.5	25.2	25.7	31.2	40.6	123	157	41-150	26	30	M1
trans-1,2-Dichloroethene	ug/kg	<0.94	25.2	25.7	27.8	34.7	110	135	33-150	22	30	
trans-1,3-Dichloropropene	ug/kg	<0.98	25.2	25.7	29.5	37.9	117	147	54-142	25	30	M1
Trichloroethene	ug/kg	<0.15	25.2	25.7	32.1	40.5	127	157	41-150	23	30	M1
Trichlorofluoromethane	ug/kg	<2.2	25.2	25.7	35.2	31.0	139	121	33-150	13	30	
Vinyl acetate	ug/kg	<2.6	25.2	25.7	25.9	33.6	102	131	70-130	26	30	M1
Vinyl chloride	ug/kg	<1.3	25.2	25.7	27.2	25.4	108	99	36-150	7	30	
1,2-Dichloroethane-d4 (S)	%.						90	93	75-126			
4-Bromofluorobenzene (S)	%.						92	93	75-128			
Toluene-d8 (S)	%.						103	105	75-125			

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 521106 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10418534013, 10418534014, 10418534015, 10418534016, 10418534017

METHOD BLANK: 2829428 Matrix: Solid
Associated Lab Samples: 10418534013, 10418534014, 10418534015, 10418534016, 10418534017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	02/02/18 16:40	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	02/02/18 16:40	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	02/02/18 16:40	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	02/02/18 16:40	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	02/02/18 16:40	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	02/02/18 16:40	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	02/02/18 16:40	
1,2,4-Trimethylbenzene	ug/kg	0.29J	4.0	0.19	02/02/18 16:40	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	02/02/18 16:40	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	02/02/18 16:40	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	02/02/18 16:40	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	02/02/18 16:40	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	02/02/18 16:40	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	02/02/18 16:40	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	02/02/18 16:40	
2-Hexanone	ug/kg	<2.3	20.0	2.3	02/02/18 16:40	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	02/02/18 16:40	
Acetone	ug/kg	11.7J	50.0	8.3	02/02/18 16:40	MN
Benzene	ug/kg	<0.55	4.0	0.55	02/02/18 16:40	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	02/02/18 16:40	
Bromoform	ug/kg	<2.6	20.0	2.6	02/02/18 16:40	
Bromomethane	ug/kg	<3.5	20.0	3.5	02/02/18 16:40	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	02/02/18 16:40	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	02/02/18 16:40	
Chloroethane	ug/kg	<1.6	10.0	1.6	02/02/18 16:40	
Chloroform	ug/kg	<0.78	4.0	0.78	02/02/18 16:40	
Chloromethane	ug/kg	<1.8	10.0	1.8	02/02/18 16:40	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	02/02/18 16:40	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	02/02/18 16:40	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	02/02/18 16:40	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	02/02/18 16:40	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	02/02/18 16:40	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	02/02/18 16:40	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	02/02/18 16:40	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	02/02/18 16:40	
Methylene Chloride	ug/kg	8.0J	20.0	2.3	02/02/18 16:40	
Naphthalene	ug/kg	<1.4	10.0	1.4	02/02/18 16:40	
o-Xylene	ug/kg	<0.48	4.0	0.48	02/02/18 16:40	
Styrene	ug/kg	<0.42	4.0	0.42	02/02/18 16:40	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	02/02/18 16:40	
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	02/02/18 16:40	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

METHOD BLANK: 2829428 Matrix: Solid
Associated Lab Samples: 10418534013, 10418534014, 10418534015, 10418534016, 10418534017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	ug/kg	<1.1	4.0	1.1	02/02/18 16:40	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	02/02/18 16:40	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	02/02/18 16:40	
Trichloroethene	ug/kg	<0.11	4.0	0.11	02/02/18 16:40	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	02/02/18 16:40	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	02/02/18 16:40	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	02/02/18 16:40	
1,2-Dichloroethane-d4 (S)	%.	96	75-126		02/02/18 16:40	
4-Bromofluorobenzene (S)	%.	100	75-128		02/02/18 16:40	
Toluene-d8 (S)	%.	99	75-125		02/02/18 16:40	

LABORATORY CONTROL SAMPLE & LCSD: 2829429 2829430

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	20.1	18.8	100	94	75-125	6	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	20.2	18.7	101	93	67-125	8	20	
1,1,2-Trichloroethane	ug/kg	20	20.7	19.1	103	96	75-125	8	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	20.0	18.9	100	94	70-125	6	20	
1,1-Dichloroethane	ug/kg	20	19.8	18.9	99	95	70-125	5	20	
1,1-Dichloroethene	ug/kg	20	20.0	19.3	100	96	67-125	4	20	
1,2,4-Trichlorobenzene	ug/kg	20	19.9	18.9	99	95	75-125	5	20	
1,2,4-Trimethylbenzene	ug/kg	20	20.4	19.0	102	95	75-125	7	20	
1,2-Dibromoethane (EDB)	ug/kg	20	21.2	19.9	106	100	75-125	6	20	
1,2-Dichlorobenzene	ug/kg	20	21.3	20.2	106	101	75-125	5	20	
1,2-Dichloroethane	ug/kg	20	19.7	18.2	98	91	74-125	8	20	
1,3,5-Trimethylbenzene	ug/kg	20	20.8	19.5	104	98	75-125	6	20	
1,3-Dichlorobenzene	ug/kg	20	21.5	20.4	107	102	75-125	5	20	
1,4-Dichlorobenzene	ug/kg	20	21.3	20.3	107	101	75-125	5	20	
2-Butanone (MEK)	ug/kg	100	93.3	83.3	93	83	56-134	11	20	
2-Hexanone	ug/kg	100	94.4	85.9	94	86	71-125	9	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	95.9	88.2	96	88	71-125	8	20	
Acetone	ug/kg	100	101	97.0	101	97	30-150	4	20	
Benzene	ug/kg	20	20.6	19.2	103	96	69-125	7	20	
Bromodichloromethane	ug/kg	20	23.1	18.9	116	95	75-125	20	20	
Bromoform	ug/kg	20	20.9	19.1J	105	95	75-125		20	
Bromomethane	ug/kg	20	24.3	21.8	121	109	67-131	11	20	
Carbon tetrachloride	ug/kg	20	20.5	19.4	102	97	75-125	5	20	
Chlorobenzene	ug/kg	20	21.7	20.4	109	102	75-125	6	20	
Chloroethane	ug/kg	20	20.8	19.5	104	98	63-125	7	20	
Chloroform	ug/kg	20	19.6	18.6	98	93	75-125	5	20	
Chloromethane	ug/kg	20	22.1	19.1	111	96	30-150	14	20	
cis-1,2-Dichloroethene	ug/kg	20	20.6	19.5	103	97	72-125	6	20	
cis-1,3-Dichloropropene	ug/kg	20	22.9	19.0	114	95	73-125	19	20	
Dibromochloromethane	ug/kg	20	21.3	19.8	107	99	75-125	7	20	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE & LCSD: 2829429 2829430

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	ug/kg	20	19.7	18.6	98	93	55-134	6	20	
Ethylbenzene	ug/kg	20	21.0	19.5	105	98	75-125	7	20	
Hexachloro-1,3-butadiene	ug/kg	20	20.0	19.1	100	96	75-125	4	20	
m&p-Xylene	ug/kg	40	41.6	39.2	104	98	75-125	6	20	
Methyl-tert-butyl ether	ug/kg	20	20.0	18.5	100	92	70-125	8	20	
Methylene Chloride	ug/kg	20	19.9J	19.1J	100	96	58-134		20	
Naphthalene	ug/kg	20	20.1	18.7	101	94	66-125	7	20	
o-Xylene	ug/kg	20	20.8	19.6	104	98	75-125	6	20	
Styrene	ug/kg	20	21.5	20.2	108	101	75-125	6	20	
Tetrachloroethene	ug/kg	20	21.1	19.9	105	100	72-125	6	20	
Tetrahydrofuran	ug/kg	200	210	191	105	96	36-146	9	20	
Toluene	ug/kg	20	19.6	18.5	98	93	75-125	6	20	
trans-1,2-Dichloroethene	ug/kg	20	20.0	18.7	100	94	69-125	7	20	
trans-1,3-Dichloropropene	ug/kg	20	21.0	19.6	105	98	75-125	7	20	
Trichloroethene	ug/kg	20	20.4	19.5	102	98	75-125	4	20	
Trichlorofluoromethane	ug/kg	20	19.4	18.4	97	92	72-127	5	20	
Vinyl acetate	ug/kg	20	20.0	18.6	100	93	69-125	7	20	
Vinyl chloride	ug/kg	20	19.5	18.2	97	91	67-127	7	20	
1,2-Dichloroethane-d4 (S)	%.				96	97	75-126			
4-Bromofluorobenzene (S)	%.				100	101	75-128			
Toluene-d8 (S)	%.				101	101	75-125			

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 521602 | Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low | Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10418534004, 10418534006, 10418534009, 10418534011

METHOD BLANK: 2831794 | Matrix: Solid
Associated Lab Samples: 10418534004, 10418534006, 10418534009, 10418534011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	02/06/18 16:51	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	02/06/18 16:51	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	02/06/18 16:51	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	02/06/18 16:51	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	02/06/18 16:51	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	02/06/18 16:51	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	02/06/18 16:51	
1,2,4-Trimethylbenzene	ug/kg	<0.19	4.0	0.19	02/06/18 16:51	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	02/06/18 16:51	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	02/06/18 16:51	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	02/06/18 16:51	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	02/06/18 16:51	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	02/06/18 16:51	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	02/06/18 16:51	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	02/06/18 16:51	
2-Hexanone	ug/kg	<2.3	20.0	2.3	02/06/18 16:51	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	02/06/18 16:51	
Acetone	ug/kg	<8.3	50.0	8.3	02/06/18 16:51	MN
Benzene	ug/kg	<0.55	4.0	0.55	02/06/18 16:51	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	02/06/18 16:51	
Bromoform	ug/kg	<2.6	20.0	2.6	02/06/18 16:51	
Bromomethane	ug/kg	<3.5	20.0	3.5	02/06/18 16:51	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	02/06/18 16:51	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	02/06/18 16:51	
Chloroethane	ug/kg	<1.6	10.0	1.6	02/06/18 16:51	
Chloroform	ug/kg	<0.78	4.0	0.78	02/06/18 16:51	
Chloromethane	ug/kg	<1.8	10.0	1.8	02/06/18 16:51	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	02/06/18 16:51	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	02/06/18 16:51	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	02/06/18 16:51	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	02/06/18 16:51	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	02/06/18 16:51	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	02/06/18 16:51	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	02/06/18 16:51	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	02/06/18 16:51	
Methylene Chloride	ug/kg	<2.3	20.0	2.3	02/06/18 16:51	
Naphthalene	ug/kg	<1.4	10.0	1.4	02/06/18 16:51	
o-Xylene	ug/kg	<0.48	4.0	0.48	02/06/18 16:51	
Styrene	ug/kg	<0.42	4.0	0.42	02/06/18 16:51	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	02/06/18 16:51	
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	02/06/18 16:51	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

METHOD BLANK: 2831794 Matrix: Solid
Associated Lab Samples: 10418534004, 10418534006, 10418534009, 10418534011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	ug/kg	<1.1	4.0	1.1	02/06/18 16:51	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	02/06/18 16:51	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	02/06/18 16:51	
Trichloroethene	ug/kg	<0.11	4.0	0.11	02/06/18 16:51	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	02/06/18 16:51	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	02/06/18 16:51	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	02/06/18 16:51	
1,2-Dichloroethane-d4 (S)	%.	99	75-126		02/06/18 16:51	
4-Bromofluorobenzene (S)	%.	99	75-128		02/06/18 16:51	
Toluene-d8 (S)	%.	99	75-125		02/06/18 16:51	

LABORATORY CONTROL SAMPLE & LCSD: 2831795 2831796

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	17.8	17.3	89	86	75-125	3	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	19.7	19.7	99	98	67-125	0	20	
1,1,2-Trichloroethane	ug/kg	20	19.5	19.7	97	99	75-125	1	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	16.6	15.9	83	80	70-125	4	20	
1,1-Dichloroethane	ug/kg	20	19.1	18.1	96	91	70-125	5	20	
1,1-Dichloroethene	ug/kg	20	17.9	16.7	89	84	67-125	7	20	
1,2,4-Trichlorobenzene	ug/kg	20	18.4	17.9	92	90	75-125	2	20	
1,2,4-Trimethylbenzene	ug/kg	20	18.0	17.7	90	88	75-125	2	20	
1,2-Dibromoethane (EDB)	ug/kg	20	20.6	20.3	103	101	75-125	2	20	
1,2-Dichlorobenzene	ug/kg	20	19.9	19.5	99	98	75-125	2	20	
1,2-Dichloroethane	ug/kg	20	19.0	18.9	95	95	74-125	0	20	
1,3,5-Trimethylbenzene	ug/kg	20	17.9	17.7	90	89	75-125	1	20	
1,3-Dichlorobenzene	ug/kg	20	19.6	19.1	98	96	75-125	3	20	
1,4-Dichlorobenzene	ug/kg	20	19.7	19.2	99	96	75-125	3	20	
2-Butanone (MEK)	ug/kg	100	97.2	96.1	97	96	56-134	1	20	
2-Hexanone	ug/kg	100	90.0	92.4	90	92	71-125	3	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	94.8	94.7	95	95	71-125	0	20	
Acetone	ug/kg	100	101	98.2	101	98	30-150	3	20	
Benzene	ug/kg	20	19.0	18.4	95	92	69-125	3	20	
Bromodichloromethane	ug/kg	20	18.9	18.7	94	94	75-125	1	20	
Bromoform	ug/kg	20	19.6J	19.3J	98	97	75-125		20	
Bromomethane	ug/kg	20	19.1J	19.0J	96	95	67-131		20	
Carbon tetrachloride	ug/kg	20	18.3	16.9	91	85	75-125	8	20	
Chlorobenzene	ug/kg	20	19.7	19.2	98	96	75-125	2	20	
Chloroethane	ug/kg	20	19.6	18.0	98	90	63-125	8	20	
Chloroform	ug/kg	20	18.5	17.8	93	89	75-125	4	20	
Chloromethane	ug/kg	20	20.8	19.7	104	98	30-150	6	20	
cis-1,2-Dichloroethene	ug/kg	20	19.6	18.5	98	93	72-125	6	20	
cis-1,3-Dichloropropene	ug/kg	20	19.0	18.4	95	92	73-125	3	20	
Dibromochloromethane	ug/kg	20	19.9	19.5	99	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE & LCSD: 2831795 2831796

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	ug/kg	20	13.8	13.0	69	65	55-134	6	20	
Ethylbenzene	ug/kg	20	18.4	17.7	92	89	75-125	4	20	
Hexachloro-1,3-butadiene	ug/kg	20	17.3	16.6	87	83	75-125	5	20	
m&p-Xylene	ug/kg	40	36.7	35.9	92	90	75-125	2	20	
Methyl-tert-butyl ether	ug/kg	20	19.8	19.5	99	98	70-125	2	20	
Methylene Chloride	ug/kg	20	18.8J	18.2J	94	91	58-134		20	
Naphthalene	ug/kg	20	18.2	18.6	91	93	66-125	2	20	
o-Xylene	ug/kg	20	18.3	18.1	91	91	75-125	1	20	
Styrene	ug/kg	20	19.1	19.0	96	95	75-125	1	20	
Tetrachloroethene	ug/kg	20	18.2	17.7	91	88	72-125	3	20	
Tetrahydrofuran	ug/kg	200	202	200	101	100	36-146	1	20	
Toluene	ug/kg	20	17.4	17.0	87	85	75-125	2	20	
trans-1,2-Dichloroethene	ug/kg	20	18.3	17.3	92	86	69-125	6	20	
trans-1,3-Dichloropropene	ug/kg	20	19.2	19.2	96	96	75-125	0	20	
Trichloroethene	ug/kg	20	18.8	18.0	94	90	75-125	4	20	
Trichlorofluoromethane	ug/kg	20	15.3	14.3	76	72	72-127	6	20	
Vinyl acetate	ug/kg	20	20.3	18.4	101	92	69-125	9	20	
Vinyl chloride	ug/kg	20	16.3	15.4	82	77	67-127	6	20	
1,2-Dichloroethane-d4 (S)	%.				100	100	75-126			
4-Bromofluorobenzene (S)	%.				96	98	75-128			
Toluene-d8 (S)	%.				99	100	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520411 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10418534019

METHOD BLANK: 2825617 Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<11.3	50.0	11.3	01/30/18 15:28	
1,1,2,2-Tetrachloroethane	ug/kg	<22.7	50.0	22.7	01/30/18 15:28	N2
1,1,2-Trichloroethane	ug/kg	<13.6	50.0	13.6	01/30/18 15:28	
1,1,2-Trichlorotrifluoroethane	ug/kg	<26.4	200	26.4	01/30/18 15:28	
1,1-Dichloroethane	ug/kg	<13.0	50.0	13.0	01/30/18 15:28	
1,1-Dichloroethene	ug/kg	<21.5	200	21.5	01/30/18 15:28	MN
1,2,4-Trichlorobenzene	ug/kg	<14.3	50.0	14.3	01/30/18 15:28	
1,2,4-Trimethylbenzene	ug/kg	<13.0	50.0	13.0	01/30/18 15:28	
1,2-Dibromoethane (EDB)	ug/kg	<19.9	50.0	19.9	01/30/18 15:28	
1,2-Dichlorobenzene	ug/kg	<10.9	50.0	10.9	01/30/18 15:28	
1,2-Dichloroethane	ug/kg	<18.3	50.0	18.3	01/30/18 15:28	
1,3,5-Trimethylbenzene	ug/kg	<9.7	50.0	9.7	01/30/18 15:28	
1,3-Dichlorobenzene	ug/kg	<17.0	50.0	17.0	01/30/18 15:28	
1,4-Dichlorobenzene	ug/kg	<18.2	50.0	18.2	01/30/18 15:28	
2-Butanone (MEK)	ug/kg	<89.5	1000	89.5	01/30/18 15:28	MN
2-Hexanone	ug/kg	<64.4	250	64.4	01/30/18 15:28	
4-Methyl-2-pentanone (MIBK)	ug/kg	<66.2	250	66.2	01/30/18 15:28	
Acetone	ug/kg	<485	1000	485	01/30/18 15:28	
Benzene	ug/kg	<7.4	20.0	7.4	01/30/18 15:28	
Bromodichloromethane	ug/kg	<18.1	50.0	18.1	01/30/18 15:28	
Bromoform	ug/kg	<36.1	500	36.1	01/30/18 15:28	MN
Bromomethane	ug/kg	<53.3	500	53.3	01/30/18 15:28	
Carbon tetrachloride	ug/kg	<20.0	200	20.0	01/30/18 15:28	MN
Chlorobenzene	ug/kg	<14.9	50.0	14.9	01/30/18 15:28	
Chloroethane	ug/kg	<76.6	500	76.6	01/30/18 15:28	
Chloroform	ug/kg	<20.5	50.0	20.5	01/30/18 15:28	
Chloromethane	ug/kg	<32.4	200	32.4	01/30/18 15:28	
cis-1,2-Dichloroethene	ug/kg	<9.0	50.0	9.0	01/30/18 15:28	
cis-1,3-Dichloropropene	ug/kg	<16.0	50.0	16.0	01/30/18 15:28	
Dibromochloromethane	ug/kg	<50.0	200	50.0	01/30/18 15:28	
Dichlorodifluoromethane	ug/kg	<78.0	200	78.0	01/30/18 15:28	
Ethylbenzene	ug/kg	<14.5	50.0	14.5	01/30/18 15:28	
Hexachloro-1,3-butadiene	ug/kg	<51.6	250	51.6	01/30/18 15:28	
m&p-Xylene	ug/kg	<26.8	100	26.8	01/30/18 15:28	
Methyl-tert-butyl ether	ug/kg	<15.6	50.0	15.6	01/30/18 15:28	
Methylene Chloride	ug/kg	<25.8	200	25.8	01/30/18 15:28	
Naphthalene	ug/kg	<44.0	200	44.0	01/30/18 15:28	
o-Xylene	ug/kg	<13.4	50.0	13.4	01/30/18 15:28	
Styrene	ug/kg	<13.5	50.0	13.5	01/30/18 15:28	
Tetrachloroethene	ug/kg	<20.9	50.0	20.9	01/30/18 15:28	
Tetrahydrofuran	ug/kg	<520	2000	520	01/30/18 15:28	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

METHOD BLANK: 2825617 Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	ug/kg	<14.2	50.0	14.2	01/30/18 15:28	
trans-1,2-Dichloroethene	ug/kg	<20.4	50.0	20.4	01/30/18 15:28	
trans-1,3-Dichloropropene	ug/kg	<35.7	50.0	35.7	01/30/18 15:28	
Trichloroethene	ug/kg	<8.5	50.0	8.5	01/30/18 15:28	N2
Trichlorofluoromethane	ug/kg	<74.3	200	74.3	01/30/18 15:28	
Vinyl acetate	ug/kg	<63.4	500	63.4	01/30/18 15:28	
Vinyl chloride	ug/kg	<8.4	20.0	8.4	01/30/18 15:28	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		01/30/18 15:28	
4-Bromofluorobenzene (S)	%.	99	75-125		01/30/18 15:28	
Toluene-d8 (S)	%.	97	75-125		01/30/18 15:28	

LABORATORY CONTROL SAMPLE & LCSD: 2825618 2825619

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	1000	991	939	99	94	59-125	5	20	
1,1,2,2-Tetrachloroethane	ug/kg	1000	1020	977	102	98	58-125	4	20	N2
1,1,2-Trichloroethane	ug/kg	1000	1030	910	103	91	64-125	13	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	1050	948	105	95	65-125	10	20	
1,1-Dichloroethane	ug/kg	1000	1020	892	102	89	63-125	13	20	
1,1-Dichloroethene	ug/kg	1000	1010	881	101	88	59-125	14	20	
1,2,4-Trichlorobenzene	ug/kg	1000	1010	968	101	97	62-125	4	20	
1,2,4-Trimethylbenzene	ug/kg	1000	1020	939	102	94	59-125	8	20	
1,2-Dibromoethane (EDB)	ug/kg	1000	1000	891	100	89	64-125	12	20	
1,2-Dichlorobenzene	ug/kg	1000	1040	951	104	95	63-125	9	20	
1,2-Dichloroethane	ug/kg	1000	928	810	93	81	57-125	14	20	
1,3,5-Trimethylbenzene	ug/kg	1000	994	939	99	94	59-125	6	20	
1,3-Dichlorobenzene	ug/kg	1000	1070	973	107	97	64-125	9	20	
1,4-Dichlorobenzene	ug/kg	1000	1030	957	103	96	63-125	8	20	
2-Butanone (MEK)	ug/kg	5000	5220	4360	104	87	48-125	18	20	
2-Hexanone	ug/kg	5000	4580	4210	92	84	57-134	9	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	4640	4250	93	85	52-135	9	20	
Acetone	ug/kg	5000	6620	5520	132	110	65-125	18	20	L3
Benzene	ug/kg	1000	959	875	96	88	61-125	9	20	
Bromodichloromethane	ug/kg	1000	995	883	99	88	57-125	12	20	
Bromoform	ug/kg	1000	945	859	94	86	57-125	9	20	
Bromomethane	ug/kg	1000	1180	1110	118	111	60-125	6	20	
Carbon tetrachloride	ug/kg	1000	960	883	96	88	58-125	8	20	
Chlorobenzene	ug/kg	1000	1060	936	106	94	66-125	13	20	
Chloroethane	ug/kg	1000	887	849	89	85	62-125	4	20	
Chloroform	ug/kg	1000	942	850	94	85	59-125	10	20	
Chloromethane	ug/kg	1000	984	893	98	89	50-125	10	20	
cis-1,2-Dichloroethene	ug/kg	1000	976	887	98	89	61-125	10	20	
cis-1,3-Dichloropropene	ug/kg	1000	1110	963	111	96	61-125	14	20	
Dibromochloromethane	ug/kg	1000	1060	960	106	96	60-125	10	20	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE & LCSD: 2825618 2825619

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	ug/kg	1000	748	729	75	73	38-125	3	20	
Ethylbenzene	ug/kg	1000	1030	918	103	92	62-125	11	20	
Hexachloro-1,3-butadiene	ug/kg	1000	988	915	99	92	56-125	8	20	
m&p-Xylene	ug/kg	2000	2100	1920	105	96	61-125	9	20	
Methyl-tert-butyl ether	ug/kg	1000	942	860	94	86	59-125	9	20	
Methylene Chloride	ug/kg	1000	1080	982	108	98	64-125	10	20	
Naphthalene	ug/kg	1000	944	922	94	92	53-125	2	20	
o-Xylene	ug/kg	1000	988	893	99	89	61-125	10	20	
Styrene	ug/kg	1000	1040	944	104	94	66-125	10	20	
Tetrachloroethene	ug/kg	1000	1120	1020	112	102	67-125	9	20	
Tetrahydrofuran	ug/kg	10000	11500	10300	115	103	62-125	11	20	
Toluene	ug/kg	1000	1040	951	104	95	61-125	9	20	
trans-1,2-Dichloroethene	ug/kg	1000	984	876	98	88	64-125	12	20	
trans-1,3-Dichloropropene	ug/kg	1000	978	875	98	88	56-125	11	20	
Trichloroethene	ug/kg	1000	974	866	97	87	67-125	12	20	N2
Trichlorofluoromethane	ug/kg	1000	1050	931	105	93	65-125	12	20	
Vinyl acetate	ug/kg	1000	978	900	98	90	52-125	8	20	
Vinyl chloride	ug/kg	1000	810	786	81	79	57-125	3	20	
1,2-Dichloroethane-d4 (S)	%.				96	97	75-125			
4-Bromofluorobenzene (S)	%.				99	101	75-125			
Toluene-d8 (S)	%.				100	102	75-125			

MATRIX SPIKE SAMPLE: 2825620

Parameter	Units	10418349005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	ND	1050	1110	105	56-148	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1050	1180	111	36-150	N2
1,1,2-Trichloroethane	ug/kg	ND	1050	1150	109	67-148	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	1050	1140	108	60-142	
1,1-Dichloroethane	ug/kg	ND	1050	1070	102	57-140	
1,1-Dichloroethene	ug/kg	ND	1050	1070	101	59-139	
1,2,4-Trichlorobenzene	ug/kg	ND	1050	1160	108	71-149	
1,2,4-Trimethylbenzene	ug/kg	ND	1050	1120	106	67-149	
1,2-Dibromoethane (EDB)	ug/kg	ND	1050	1110	105	67-147	
1,2-Dichlorobenzene	ug/kg	ND	1050	1160	109	70-142	
1,2-Dichloroethane	ug/kg	ND	1050	1000	95	58-132	
1,3,5-Trimethylbenzene	ug/kg	ND	1050	1100	104	71-146	
1,3-Dichlorobenzene	ug/kg	ND	1050	1180	112	71-142	
1,4-Dichlorobenzene	ug/kg	ND	1050	1170	111	68-142	
2-Butanone (MEK)	ug/kg	ND	5280	5550	105	51-150	
2-Hexanone	ug/kg	ND	5280	5100	97	57-150	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	5280	5320	101	63-150	
Acetone	ug/kg	ND	5280	6990	132	54-150	
Benzene	ug/kg	ND	1050	1050	99	65-135	
Bromodichloromethane	ug/kg	ND	1050	1120	106	59-148	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

MATRIX SPIKE SAMPLE: 2825620

Parameter	Units	10418349005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromoform	ug/kg	ND	1050	1060	100	57-145	
Bromomethane	ug/kg	ND	1050	1310	124	51-129	
Carbon tetrachloride	ug/kg	ND	1050	1070	101	55-144	
Chlorobenzene	ug/kg	ND	1050	1140	108	70-142	
Chloroethane	ug/kg	ND	1050	998	94	61-135	
Chloroform	ug/kg	ND	1050	1030	96	58-135	
Chloromethane	ug/kg	ND	1050	1010	96	37-125	
cis-1,2-Dichloroethene	ug/kg	ND	1050	1070	101	60-138	
cis-1,3-Dichloropropene	ug/kg	ND	1050	1220	116	62-142	
Dibromochloromethane	ug/kg	ND	1050	1180	112	65-141	
Dichlorodifluoromethane	ug/kg	ND	1050	723	68	30-125	
Ethylbenzene	ug/kg	ND	1050	1130	107	72-138	
Hexachloro-1,3-butadiene	ug/kg	ND	1050	1180	111	38-150	
m&p-Xylene	ug/kg	ND	2120	2270	108	74-142	
Methyl-tert-butyl ether	ug/kg	ND	1050	1040	99	63-139	
Methylene Chloride	ug/kg	ND	1050	1150	105	58-135	
Naphthalene	ug/kg	ND	1050	1110	104	63-150	
o-Xylene	ug/kg	ND	1050	1070	101	74-141	
Styrene	ug/kg	ND	1050	1160	110	72-146	
Tetrachloroethene	ug/kg	ND	1050	1250	119	70-150	
Tetrahydrofuran	ug/kg	ND	10500	12300	116	62-150	
Toluene	ug/kg	ND	1050	1130	105	65-142	
trans-1,2-Dichloroethene	ug/kg	ND	1050	1060	100	55-141	
trans-1,3-Dichloropropene	ug/kg	ND	1050	1100	104	57-147	
Trichloroethene	ug/kg	ND	1050	1070	101	62-150	N2
Trichlorofluoromethane	ug/kg	ND	1050	1040	99	51-150	
Vinyl acetate	ug/kg	ND	1050	1120	106	30-150	
Vinyl chloride	ug/kg	ND	1050	860	81	45-132	
1,2-Dichloroethane-d4 (S)	%.				95	75-125	
4-Bromofluorobenzene (S)	%.				100	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2825621

Parameter	Units	10418349006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	ND	<13.6		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	<27.2		30	N2
1,1,2-Trichloroethane	ug/kg	ND	<16.3		30	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	<31.7		30	
1,1-Dichloroethane	ug/kg	ND	<15.6		30	
1,1-Dichloroethene	ug/kg	ND	<25.8		30	
1,2,4-Trichlorobenzene	ug/kg	ND	<17.2		30	
1,2,4-Trimethylbenzene	ug/kg	ND	<15.6		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	<23.9		30	
1,2-Dichlorobenzene	ug/kg	ND	<13.1		30	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

SAMPLE DUPLICATE: 2825621

Parameter	Units	10418349006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/kg	ND	<21.9		30	
1,3,5-Trimethylbenzene	ug/kg	ND	<11.6		30	
1,3-Dichlorobenzene	ug/kg	ND	<20.4		30	
1,4-Dichlorobenzene	ug/kg	ND	<21.8		30	
2-Butanone (MEK)	ug/kg	ND	<107		30	
2-Hexanone	ug/kg	ND	<77.2		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	<79.4		30	
Acetone	ug/kg	ND	<582		30	
Benzene	ug/kg	ND	<8.9		30	
Bromodichloromethane	ug/kg	ND	<21.7		30	
Bromoform	ug/kg	ND	<43.3		30	
Bromomethane	ug/kg	ND	<63.9		30	
Carbon tetrachloride	ug/kg	ND	<24.0		30	
Chlorobenzene	ug/kg	ND	<17.9		30	
Chloroethane	ug/kg	ND	<91.9		30	
Chloroform	ug/kg	ND	<24.6		30	
Chloromethane	ug/kg	ND	<38.9		30	
cis-1,2-Dichloroethene	ug/kg	ND	<10.8		30	
cis-1,3-Dichloropropene	ug/kg	ND	<19.2		30	
Dibromochloromethane	ug/kg	ND	<60.0		30	
Dichlorodifluoromethane	ug/kg	ND	<93.5		30	
Ethylbenzene	ug/kg	ND	<17.4		30	
Hexachloro-1,3-butadiene	ug/kg	ND	<61.9		30	
m&p-Xylene	ug/kg	ND	<32.1		30	
Methyl-tert-butyl ether	ug/kg	ND	<18.7		30	
Methylene Chloride	ug/kg	ND	<30.9		30	
Naphthalene	ug/kg	ND	<52.8		30	
o-Xylene	ug/kg	ND	<16.1		30	
Styrene	ug/kg	ND	<16.2		30	
Tetrachloroethene	ug/kg	ND	<25.1		30	
Tetrahydrofuran	ug/kg	ND	<624		30	
Toluene	ug/kg	ND	<17.0		30	
trans-1,2-Dichloroethene	ug/kg	ND	<24.5		30	
trans-1,3-Dichloropropene	ug/kg	ND	<42.8		30	
Trichloroethene	ug/kg	ND	<10.1		30	N2
Trichlorofluoromethane	ug/kg	ND	<89.1		30	
Vinyl acetate	ug/kg	ND	<76.0		30	
Vinyl chloride	ug/kg	ND	<10.1		30	
1,2-Dichloroethane-d4 (S)	%.	95	93	3		
4-Bromofluorobenzene (S)	%.	101	101	4		
Toluene-d8 (S)	%.	100	99	4		

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

QC Batch: 520275 | Analysis Method: EPA 8270D
QC Batch Method: EPA 3550 | Analysis Description: 8270D Solid MSSV
Associated Lab Samples: 10418534019

METHOD BLANK: 2825124 | Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	<64.1	330	64.1	01/30/18 12:18	
1,2-Dichlorobenzene	ug/kg	<62.4	330	62.4	01/30/18 12:18	
1,2-Diphenylhydrazine	ug/kg	<59.7	330	59.7	01/30/18 12:18	
1,3-Dichlorobenzene	ug/kg	<61.6	330	61.6	01/30/18 12:18	
1,4-Dichlorobenzene	ug/kg	<60.2	330	60.2	01/30/18 12:18	
1-Methylnaphthalene	ug/kg	<51.9	330	51.9	01/30/18 12:18	
2,4,5-Trichlorophenol	ug/kg	<64.5	330	64.5	01/30/18 12:18	
2,4,6-Trichlorophenol	ug/kg	<46.9	330	46.9	01/30/18 12:18	
2,4-Dichlorophenol	ug/kg	<62.3	330	62.3	01/30/18 12:18	
2,4-Dimethylphenol	ug/kg	<124	330	124	01/30/18 12:18	
2,4-Dinitrophenol	ug/kg	<74.3	330	74.3	01/30/18 12:18	
2,4-Dinitrotoluene	ug/kg	<44.7	330	44.7	01/30/18 12:18	
2,6-Dinitrotoluene	ug/kg	<46.1	330	46.1	01/30/18 12:18	
2-Chloronaphthalene	ug/kg	<46.9	330	46.9	01/30/18 12:18	
2-Chlorophenol	ug/kg	<65.7	330	65.7	01/30/18 12:18	
2-Methylnaphthalene	ug/kg	<51.2	330	51.2	01/30/18 12:18	
2-Methylphenol(o-Cresol)	ug/kg	<83.2	330	83.2	01/30/18 12:18	
2-Nitroaniline	ug/kg	<73.0	330	73.0	01/30/18 12:18	
2-Nitrophenol	ug/kg	<62.2	330	62.2	01/30/18 12:18	
3&4-Methylphenol(m&p Cresol)	ug/kg	<74.5	660	74.5	01/30/18 12:18	
3,3'-Dichlorobenzidine	ug/kg	<79.0	330	79.0	01/30/18 12:18	
3-Nitroaniline	ug/kg	<80.9	330	80.9	01/30/18 12:18	
4,6-Dinitro-2-methylphenol	ug/kg	<133	1700	133	01/30/18 12:18	
4-Bromophenylphenyl ether	ug/kg	<55.7	330	55.7	01/30/18 12:18	
4-Chloro-3-methylphenol	ug/kg	<45.8	330	45.8	01/30/18 12:18	
4-Chloroaniline	ug/kg	<92.5	330	92.5	01/30/18 12:18	
4-Chlorophenylphenyl ether	ug/kg	<45.2	330	45.2	01/30/18 12:18	
4-Nitroaniline	ug/kg	<58.9	330	58.9	01/30/18 12:18	
4-Nitrophenol	ug/kg	<95.4	330	95.4	01/30/18 12:18	
Acenaphthene	ug/kg	<54.1	330	54.1	01/30/18 12:18	
Acenaphthylene	ug/kg	<45.3	330	45.3	01/30/18 12:18	
Anthracene	ug/kg	<47.6	330	47.6	01/30/18 12:18	
Benzo(a)anthracene	ug/kg	<38.4	330	38.4	01/30/18 12:18	
Benzo(a)pyrene	ug/kg	<37.4	330	37.4	01/30/18 12:18	
Benzo(b)fluoranthene	ug/kg	<40.0	330	40.0	01/30/18 12:18	
Benzo(g,h,i)perylene	ug/kg	<28.6	330	28.6	01/30/18 12:18	
Benzo(k)fluoranthene	ug/kg	<40.0	330	40.0	01/30/18 12:18	
bis(2-Chloroethoxy)methane	ug/kg	<64.1	330	64.1	01/30/18 12:18	
bis(2-Chloroethyl) ether	ug/kg	<72.4	330	72.4	01/30/18 12:18	
bis(2-Chloroisopropyl) ether	ug/kg	<76.7	330	76.7	01/30/18 12:18	
bis(2-Ethylhexyl)phthalate	ug/kg	<84.5	330	84.5	01/30/18 12:18	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

METHOD BLANK: 2825124 Matrix: Solid
Associated Lab Samples: 10418534019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	<73.2	330	73.2	01/30/18 12:18	
Carbazole	ug/kg	<44.4	330	44.4	01/30/18 12:18	
Chrysene	ug/kg	<33.2	330	33.2	01/30/18 12:18	
Di-n-butylphthalate	ug/kg	<45.2	330	45.2	01/30/18 12:18	
Di-n-octylphthalate	ug/kg	<101	330	101	01/30/18 12:18	
Dibenz(a,h)anthracene	ug/kg	<34.1	330	34.1	01/30/18 12:18	
Dibenzofuran	ug/kg	<48.0	330	48.0	01/30/18 12:18	
Diethylphthalate	ug/kg	<39.2	330	39.2	01/30/18 12:18	
Dimethylphthalate	ug/kg	<50.9	330	50.9	01/30/18 12:18	
Fluoranthene	ug/kg	<35.3	330	35.3	01/30/18 12:18	
Fluorene	ug/kg	<46.1	330	46.1	01/30/18 12:18	
Hexachloro-1,3-butadiene	ug/kg	<76.2	330	76.2	01/30/18 12:18	
Hexachlorobenzene	ug/kg	<42.7	330	42.7	01/30/18 12:18	
Hexachloroethane	ug/kg	<67.6	330	67.6	01/30/18 12:18	
Indeno(1,2,3-cd)pyrene	ug/kg	<38.5	330	38.5	01/30/18 12:18	
Isophorone	ug/kg	<75.8	330	75.8	01/30/18 12:18	
N-Nitroso-di-n-propylamine	ug/kg	<101	330	101	01/30/18 12:18	
N-Nitrosodimethylamine	ug/kg	<86.5	330	86.5	01/30/18 12:18	
N-Nitrosodiphenylamine	ug/kg	<40.6	330	40.6	01/30/18 12:18	
Naphthalene	ug/kg	<62.9	330	62.9	01/30/18 12:18	
Nitrobenzene	ug/kg	<66.4	330	66.4	01/30/18 12:18	
Pentachlorophenol	ug/kg	<97.6	670	97.6	01/30/18 12:18	
Phenanthrene	ug/kg	<45.3	330	45.3	01/30/18 12:18	
Phenol	ug/kg	<63.9	330	63.9	01/30/18 12:18	
Pyrene	ug/kg	<34.8	330	34.8	01/30/18 12:18	
2,4,6-Tribromophenol (S)	%.	100	60-125		01/30/18 12:18	
2-Fluorobiphenyl (S)	%.	96	30-132		01/30/18 12:18	
2-Fluorophenol (S)	%.	96	40-125		01/30/18 12:18	
Nitrobenzene-d5 (S)	%.	97	43-125		01/30/18 12:18	
p-Terphenyl-d14 (S)	%.	104	62-125		01/30/18 12:18	
Phenol-d6 (S)	%.	93	48-125		01/30/18 12:18	

LABORATORY CONTROL SAMPLE: 2825125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1220	73	46-125	
1,2-Dichlorobenzene	ug/kg	1670	1180	71	41-125	
1,2-Diphenylhydrazine	ug/kg	1670	1400	84	63-125	
1,3-Dichlorobenzene	ug/kg	1670	1150	69	38-125	
1,4-Dichlorobenzene	ug/kg	1670	1180	71	39-125	
1-Methylnaphthalene	ug/kg	1670	1280	77	56-125	
2,4,5-Trichlorophenol	ug/kg	1670	1410	84	63-125	
2,4,6-Trichlorophenol	ug/kg	1670	1440	87	61-125	
2,4-Dichlorophenol	ug/kg	1670	1300	78	57-125	

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE: 2825125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dimethylphenol	ug/kg	1670	1280	77	51-125	
2,4-Dinitrophenol	ug/kg	1670	1540	93	30-132	
2,4-Dinitrotoluene	ug/kg	1670	1510	91	62-125	
2,6-Dinitrotoluene	ug/kg	1670	1440	86	63-125	
2-Chloronaphthalene	ug/kg	1670	1310	78	61-125	
2-Chlorophenol	ug/kg	1670	1200	72	46-125	
2-Methylnaphthalene	ug/kg	1670	1270	76	55-125	
2-Methylphenol(o-Cresol)	ug/kg	1670	1190	72	50-125	
2-Nitroaniline	ug/kg	1670	1430	86	61-125	
2-Nitrophenol	ug/kg	1670	1300	78	43-125	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1260	76	54-125	
3,3'-Dichlorobenzidine	ug/kg	1670	1380	83	47-125	
3-Nitroaniline	ug/kg	1670	1410	84	57-125	
4,6-Dinitro-2-methylphenol	ug/kg	1670	1580J	95	30-141	
4-Bromophenylphenyl ether	ug/kg	1670	1450	87	63-125	
4-Chloro-3-methylphenol	ug/kg	1670	1360	82	64-125	
4-Chloroaniline	ug/kg	1670	1140	68	36-125	
4-Chlorophenylphenyl ether	ug/kg	1670	1400	84	64-125	
4-Nitroaniline	ug/kg	1670	1420	85	59-125	
4-Nitrophenol	ug/kg	1670	1440	87	54-125	
Acenaphthene	ug/kg	1670	1350	81	62-125	
Acenaphthylene	ug/kg	1670	1360	81	61-125	
Anthracene	ug/kg	1670	1430	86	66-125	
Benzo(a)anthracene	ug/kg	1670	1430	86	69-125	
Benzo(a)pyrene	ug/kg	1670	1480	89	67-125	
Benzo(b)fluoranthene	ug/kg	1670	1440	87	67-125	
Benzo(g,h,i)perylene	ug/kg	1670	1450	87	63-125	
Benzo(k)fluoranthene	ug/kg	1670	1560	93	68-125	
bis(2-Chloroethoxy)methane	ug/kg	1670	1220	73	52-125	
bis(2-Chloroethyl) ether	ug/kg	1670	1190	71	41-125	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1180	71	37-125	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1570	94	69-131	
Butylbenzylphthalate	ug/kg	1670	1510	91	69-129	
Carbazole	ug/kg	1670	1450	87	66-125	
Chrysene	ug/kg	1670	1460	87	68-125	
Di-n-butylphthalate	ug/kg	1670	1480	89	69-125	
Di-n-octylphthalate	ug/kg	1670	1520	91	69-133	
Dibenz(a,h)anthracene	ug/kg	1670	1460	88	64-125	
Dibenzofuran	ug/kg	1670	1390	83	65-125	
Diethylphthalate	ug/kg	1670	1420	85	67-125	
Dimethylphthalate	ug/kg	1670	1420	85	67-125	
Fluoranthene	ug/kg	1670	1430	86	66-125	
Fluorene	ug/kg	1670	1410	85	66-125	
Hexachloro-1,3-butadiene	ug/kg	1670	1190	72	40-125	
Hexachlorobenzene	ug/kg	1670	1410	85	62-125	
Hexachloroethane	ug/kg	1670	1160	69	33-125	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1480	89	64-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

LABORATORY CONTROL SAMPLE: 2825125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	1670	1260	76	57-125	
N-Nitroso-di-n-propylamine	ug/kg	1670	1240	74	50-125	
N-Nitrosodimethylamine	ug/kg	1670	1080	65	36-125	
N-Nitrosodiphenylamine	ug/kg	1670	1420	85	65-125	
Naphthalene	ug/kg	1670	1260	75	48-125	
Nitrobenzene	ug/kg	1670	1240	74	48-125	
Pentachlorophenol	ug/kg	1670	1570	94	41-125	
Phenanthrene	ug/kg	1670	1450	87	66-125	
Phenol	ug/kg	1670	1230	74	46-125	
Pyrene	ug/kg	1670	1500	90	69-125	
2,4,6-Tribromophenol (S)	%.			95	60-125	
2-Fluorobiphenyl (S)	%.			80	30-132	
2-Fluorophenol (S)	%.			77	40-125	
Nitrobenzene-d5 (S)	%.			78	43-125	
p-Terphenyl-d14 (S)	%.			93	62-125	
Phenol-d6 (S)	%.			77	48-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2825126 2825127

Parameter	Units	10418534019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	<94.0	2440	2450	1510	1590	62	65	30-127	5	30	
1,2-Dichlorobenzene	ug/kg	<91.5	2440	2450	1480	1560	61	64	30-125	5	30	
1,2-Diphenylhydrazine	ug/kg	<87.5	2440	2450	1820	1910	74	78	30-150	5	30	
1,3-Dichlorobenzene	ug/kg	<90.3	2440	2450	1460	1530	60	63	30-125	5	30	
1,4-Dichlorobenzene	ug/kg	<88.3	2440	2450	1470	1530	60	63	30-125	4	30	
1-Methylnaphthalene	ug/kg	<76.1	2440	2450	1640	1680	67	69	42-125	2	30	
2,4,5-Trichlorophenol	ug/kg	<94.6	2440	2450	1820	1870	74	76	30-150	3	30	
2,4,6-Trichlorophenol	ug/kg	<68.8	2440	2450	1820	1900	75	78	30-150	4	30	
2,4-Dichlorophenol	ug/kg	<91.4	2440	2450	1670	1690	69	69	30-135	1	30	
2,4-Dimethylphenol	ug/kg	<182	2440	2450	1650	1690	68	69	30-148	2	30	
2,4-Dinitrophenol	ug/kg	<109	2440	2450	1620	1590	67	65	30-125	2	30	
2,4-Dinitrotoluene	ug/kg	<65.6	2440	2450	1900	2040	78	84	30-150	7	30	
2,6-Dinitrotoluene	ug/kg	<67.6	2440	2450	1820	2000	75	82	30-150	9	30	
2-Chloronaphthalene	ug/kg	<68.8	2440	2450	1670	1720	68	70	30-138	3	30	
2-Chlorophenol	ug/kg	<96.3	2440	2450	1510	1590	62	65	30-130	5	30	
2-Methylnaphthalene	ug/kg	<75.1	2440	2450	1640	1660	67	68	46-125	1	30	
2-Methylphenol(o-Cresol)	ug/kg	<122	2440	2450	1540	1610	63	66	30-133	4	30	
2-Nitroaniline	ug/kg	<107	2440	2450	1850	1940	76	79	30-150	4	30	
2-Nitrophenol	ug/kg	<91.2	2440	2450	1610	1630	66	67	30-134	1	30	
3&4-Methylphenol(m&p Cresol)	ug/kg	<109	2440	2450	1640	1660	67	68	30-138	1	30	
3,3'-Dichlorobenzidine	ug/kg	<116	2440	2450	1530	1800	63	74	30-149	16	30	
3-Nitroaniline	ug/kg	<119	2440	2450	1690	2010	69	82	30-150	18	30	
4,6-Dinitro-2-methylphenol	ug/kg	<195	2440	2450	1850J	1850J	76	76	30-133		30	

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2825126 2825127

Parameter	Units	10418534019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromophenylphenyl ether	ug/kg	<81.7	2440	2450	1830	1910	75	78	44-125	4	30	
4-Chloro-3-methylphenol	ug/kg	<67.2	2440	2450	1800	1830	74	75	30-150	2	30	
4-Chloroaniline	ug/kg	<136	2440	2450	1360	1690	56	69	30-125	21	30	
4-Chlorophenylphenyl ether	ug/kg	<66.3	2440	2450	1790	1880	73	77	44-125	5	30	
4-Nitroaniline	ug/kg	<86.4	2440	2450	1790	1920	73	79	30-150	7	30	
4-Nitrophenol	ug/kg	<140	2440	2450	1830	1930	75	79	30-150	5	30	
Acenaphthene	ug/kg	<79.3	2440	2450	1720	1790	71	73	40-125	4	30	
Acenaphthylene	ug/kg	<66.4	2440	2450	1740	1810	71	74	30-150	4	30	
Anthracene	ug/kg	<69.8	2440	2450	1830	1980	75	81	30-150	8	30	
Benzo(a)anthracene	ug/kg	<56.3	2440	2450	1880	1970	77	81	30-150	5	30	
Benzo(a)pyrene	ug/kg	<54.8	2440	2450	1850	1980	76	81	30-150	7	30	
Benzo(b)fluoranthene	ug/kg	<58.7	2440	2450	1900	2070	78	84	30-150	9	30	
Benzo(g,h,i)perylene	ug/kg	<41.9	2440	2450	1830	1920	75	79	30-150	5	30	
Benzo(k)fluoranthene	ug/kg	<58.7	2440	2450	1890	2020	77	83	30-150	7	30	
bis(2-Chloroethoxy)methane	ug/kg	<94.0	2440	2450	1580	1600	65	66	30-134	2	30	
bis(2-Chloroethyl) ether	ug/kg	<106	2440	2450	1490	1590	61	65	30-125	6	30	
bis(2-Chloroisopropyl) ether	ug/kg	<112	2440	2450	1490	1550	61	63	30-125	4	30	
bis(2-Ethylhexyl)phthalate	ug/kg	<124	2440	2450	2010	2080	82	85	30-150	3	30	
Butylbenzylphthalate	ug/kg	<107	2440	2450	1930	1990	79	81	30-150	3	30	
Carbazole	ug/kg	<65.1	2440	2450	1870	2000	77	82	41-125	7	30	
Chrysene	ug/kg	<48.7	2440	2450	1890	2000	77	82	30-150	6	30	
Di-n-butylphthalate	ug/kg	<66.3	2440	2450	1920	2040	79	83	30-150	6	30	
Di-n-octylphthalate	ug/kg	<148	2440	2450	1930	2020	79	83	30-150	5	30	
Dibenz(a,h)anthracene	ug/kg	<50.0	2440	2450	1820	1970	75	81	30-150	8	30	
Dibenzofuran	ug/kg	<70.4	2440	2450	1770	1850	73	75	45-125	4	30	
Diethylphthalate	ug/kg	<57.5	2440	2450	1860	1970	76	80	30-150	6	30	
Dimethylphthalate	ug/kg	<74.6	2440	2450	1800	1920	74	79	30-150	6	30	
Fluoranthene	ug/kg	<51.8	2440	2450	1850	2010	76	82	30-150	9	30	
Fluorene	ug/kg	<67.6	2440	2450	1820	1890	75	77	30-150	4	30	
Hexachloro-1,3-butadiene	ug/kg	<112	2440	2450	1460	1550	60	63	30-128	6	30	
Hexachlorobenzene	ug/kg	<62.6	2440	2450	1800	1920	74	78	30-150	6	30	
Hexachloroethane	ug/kg	<99.1	2440	2450	1430	1540	59	63	30-125	7	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<56.5	2440	2450	1830	1970	75	81	30-150	7	30	
Isophorone	ug/kg	<111	2440	2450	1620	1640	66	67	30-140	2	30	
N-Nitroso-di-n-propylamine	ug/kg	<148	2440	2450	1590	1650	65	67	30-147	4	30	
N-Nitrosodimethylamine	ug/kg	<127	2440	2450	1350	1470	55	60	30-125	8	30	
N-Nitrosodiphenylamine	ug/kg	<59.5	2440	2450	1850	1920	76	79	30-150	4	30	
Naphthalene	ug/kg	<92.2	2440	2450	1570	1610	64	66	44-125	3	30	
Nitrobenzene	ug/kg	<97.4	2440	2450	1510	1590	62	65	30-136	5	30	
Pentachlorophenol	ug/kg	<143	2440	2450	2000	2140	82	88	30-150	7	30	
Phenanthrene	ug/kg	<66.4	2440	2450	1870	1960	77	80	30-150	5	30	
Phenol	ug/kg	<93.7	2440	2450	1570	1610	64	66	30-129	3	30	
Pyrene	ug/kg	<51.0	2440	2450	1940	2060	80	84	30-150	6	30	
2,4,6-Tribromophenol (S)	%.						83	88	60-125			
2-Fluorobiphenyl (S)	%.						70	73	30-132			
2-Fluorophenol (S)	%.						64	67	40-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2825126 2825127

Parameter	Units	10418534019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrobenzene-d5 (S)	%.						65	67	43-125			
p-Terphenyl-d14 (S)	%.						80	86	62-125			
Phenol-d6 (S)	%.						66	69	48-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 521324

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 521763

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
C0	Result confirmed by second analysis.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
IO	The internal standard response was outside the laboratory acceptance limits confirmed by reanalysis. The results reported are from the most QC compliant analysis.
IS	The internal standard response is below criteria. Results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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QUALIFIERS

Project:	1497 FREEMAN UPRR-Revised Report
Pace Project No.:	10418534

ANALYTE QUALIFIERS

P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
S0	Surrogate recovery outside laboratory control limits.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

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METHOD CROSS REFERENCE TABLE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B
8260B MSV 5035 Low Level	Solid	SW-846 8260B	SW-846 5035A/5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 FREEMAN UPRR-Revised Report
Pace Project No.: 10418534

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10418534019	**WC-012518**	EPA 3050	520097	EPA 6010C	520207
10418534019	**WC-012518**	EPA 7471B	520102	EPA 7471B	520234
10418534002	**SB101B-5**	ASTM D2974	520155		
10418534003	**SB101B-15**	ASTM D2974	520155		
10418534004	**SB101B-25**	ASTM D2974	520155		
10418534005	**SB101B-36**	ASTM D2974	520155		
10418534006	**SB102B-5**	ASTM D2974	520155		
10418534007	**SB102B-15**	ASTM D2974	520155		
10418534008	**SB102B-25**	ASTM D2974	520155		
10418534009	**SB102B-30**	ASTM D2974	520155		
10418534010	**SB103B-5**	ASTM D2974	520155		
10418534011	**SB103B-15**	ASTM D2974	520155		
10418534012	**SB103B-22**	ASTM D2974	520155		
10418534013	**SB103B-27**	ASTM D2974	520155		
10418534014	**SB103B-27-FD**	ASTM D2974	520155		
10418534015	**SB104B-5**	ASTM D2974	520155		
10418534016	**SB104B-15**	ASTM D2974	520155		
10418534017	**SB104B-22**	ASTM D2974	520155		
10418534018	**SB104B-27**	ASTM D2974	520155		
10418534019	**WC-012518**	ASTM D2974	520155		
10418534019	**WC-012518**	EPA 3550	520275	EPA 8270D	520407
10418534001	**Trip Blank**	EPA 5035 Low	520269	EPA 8260B	521595
10418534002	**SB101B-5**	EPA 5035 Low	520269	EPA 8260B	521595
10418534003	**SB101B-15**	EPA 5035 Low	520269	EPA 8260B	521595
10418534004	**SB101B-25**	EPA 5035 Low	521602	EPA 8260B	521763
10418534005	**SB101B-36**	EPA 5035 Low	520269	EPA 8260B	521595
10418534006	**SB102B-5**	EPA 5035 Low	521602	EPA 8260B	521763
10418534007	**SB102B-15**	EPA 5035 Low	520269	EPA 8260B	521595
10418534008	**SB102B-25**	EPA 5035 Low	520269	EPA 8260B	521595
10418534009	**SB102B-30**	EPA 5035 Low	521602	EPA 8260B	521763
10418534010	**SB103B-5**	EPA 5035 Low	520269	EPA 8260B	521595
10418534011	**SB103B-15**	EPA 5035 Low	521602	EPA 8260B	521763
10418534012	**SB103B-22**	EPA 5035 Low	520269	EPA 8260B	521595
10418534013	**SB103B-27**	EPA 5035 Low	521106	EPA 8260B	521324
10418534014	**SB103B-27-FD**	EPA 5035 Low	521106	EPA 8260B	521324
10418534015	**SB104B-5**	EPA 5035 Low	521106	EPA 8260B	521324
10418534016	**SB104B-15**	EPA 5035 Low	521106	EPA 8260B	521324
10418534017	**SB104B-22**	EPA 5035 Low	521106	EPA 8260B	521324
10418534018	**SB104B-27**	EPA 5035 Low	520269	EPA 8260B	521595
10418534019	**WC-012518**	EPA 5035/5030B	520411	EPA 8260B	520589

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CHAIN-OF-CUSTODY / Analytical Request Document

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10418534

Page: 1	of 2
2134916	

Section A
Required Client Information:

Company:	CH2M
Address:	999 W Riverside Ave Suite 500
Email To:	Steve.demus@ch2m.com
Phone:	509 464 7222
Fax:	
Requested Due Date/TAT:	STANDARD

Section B
Required Project Information:

Report To:	STEVE.DEMUS@CH2M.COM
Copy To:	
Purchase Order No.:	
Project Name:	FREEMAN UPRR
Project Number:	1497

Section C
Invoice Information:

Attention:	Anne Theriault
Company Name:	UPRR
Address:	1400 W. 52nd Ave, Denver CO
Pace Quote Reference:	Contract # 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	36447/4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location: Freeman
STATE: WA

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

Requested Analysis Filtered (Y/N): Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	8260	8260 (low level)	DRY WEIGHT	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~FB~~ TRIP BLANK	NA	G	1/23/18	0800	→	→	—	4						X	X			X	X			001
2	SV101B-5	SL	G	1/23/18	1040	—	—	—	5	X					X	X			X		X		002
3	SV101B-15	SL	G	1/23/18	1055	—	—	—	5	X					X	X			X		X		003
4	SV101B-25	SL	G	1/23/18	1135	—	—	—	5	X					X	X			X		X		004
5	SV101B-36	SL	G	1/23/18	1225	—	—	—	5	X					X	X			X		X		005
6	SV102B-5	SL	G	1/24/18	1225	—	—	—	5	X					X	X			X		X		006
7	SV102B-15	SL	G	1/24/18	1230	—	—	—	5	X					X	X			X		X		007
8	SV102B-25	SL	G	1/24/18	1235	—	—	—	5	X					X	X			X		X		008
9	SV102B-30	SL	G	1/24/18	1240	—	—	—	5	X					X	X			X		X		009
10	SV103B-5	SL	G	1/25/18	0925	—	—	—	5	X					X	X			X		X		010
11	SV103B-15	SL	G	1/25/18	0955	—	—	—	5	X					X	X			X		X		011
12	SV103B-22	SL	G	1/25/18	1000	—	—	—	5	X					X	X			X		X		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / CH2M	1/26/17	1430	[signature] Pace	1/27/18	10:15	4.0 / 1.9	Y	Y	Y
						~~4.0~~ ~~1.9~~ 1/27/18				
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 1/23/17

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 2

2134914

Section A Required Client Information:

- Company: CH2M
- Address: 999 W. Riverside Ave Suite 500
- Email To: STEVE.DEMUS@CH2M.COM
- Phone: 509 464 7222 Fax:
- Requested Due Date/TAT: STANDARD

Section B Required Project Information:

- Report To: STEVE.DEMUS@CH2M.COM
- Copy To:
- Purchase Order No.:
- Project Name: FREEMAN
- Project Number: 1497

Section C Invoice Information:

- Attention: Anne Theriault
- Company Name: UPRR
- Address: 1400 W. 52nd Ave Denver, CO
- Pace Quote Reference: Contract # 758938
- Pace Project Manager: Jennifer Gross
- Pace Profile #: 36447/4

REGULATORY AGENCY: NPDES / GROUND WATER / DRINKING WATER / UST / RCRA / OTHER

Site Location: Freeman STATE: WA

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	8260	DRY WEIGHT	RCRA Metals 6010	RCRA Hg 7471	SVOCs 8270	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SV103B-27	SL	G	1/25/18	1030	—	—	—	5	X					X	X			X	X					013
2	SV103B-~~27~~-FD	SL	G	1/25/18	1040	—	—	—	5	X					X	X			X	X					014
3	SV104B-5	SL	G	1/25/18	1120	—	—	—	5	X					X	X			X	X					015
4	SV104B-15	SL	G	1/25/18	1200	—	—	—	5	X					X	X			X	X					016
5	SV104B-22	SL	G	1/25/18	1225	—	—	—	5	X					X	X			X	X					017
6	SV104B-27	SL	G	1/25/18	1230	—	—	—	5	X					X	X			X	X					018
7	SV104B-27-MS/MSD	SL	G	1/25/18	1230	—	—	—	5	X					X	X			X	X					018 ~~1 voa for analysis~~ JWF
8	WC-012518	SL	C	1/25/18	1700	—	—	—	4	X						X			X	X	X	X	X		019
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] / CH2M	1/26/18	1430							
				[signature] / Pace	1/27/18	10:15	4.0 / 1.9	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/23/17

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M UPPER **Project #:**

WO# : 10418534

10418534

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other: ____

Tracking Number: 7448 1033 2439; 28

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: ____ **Temp Blank?** ☐ Yes ☑ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.2; 2.1 **Cooler Temp Corrected (°C):** 4.0; 1.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** 1/27/18 ZO

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: ____ Lot # of added preservative: ____
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): ____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time: 13:01	put in cooler 4.2	4.0
Time: 13:20	Temp: 2.1	Corrected Temp: 1.9

Project Manager Review: JENNI GROSS **Date:** 01/29/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s[...]orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 12, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on February 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Mark Ochsner, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	661508 UPRR Freeman
Pace Project No.:	10419905

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10419905001	**Sump-O-020618**	Solid	02/06/18 13:35	02/08/18 10:15
10419905002	**Sump-3-020618**	Solid	02/06/18 13:45	02/08/18 10:15
10419905003	**Trip Blank**	Solid	02/06/18 00:00	02/08/18 10:15

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SAMPLE ANALYTE COUNT

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10419905001	**Sump-O-020618**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10419905002	**Sump-3-020618**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10419905003	**Trip Blank**	EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10419905001	**Sump-O-020618**					
ASTM D2974	Percent Moisture	26.0	%	0.10	02/09/18 10:48	
10419905002	**Sump-3-020618**					
ASTM D2974	Percent Moisture	15.2	%	0.10	02/09/18 10:48	
EPA 8260B	2-Hexanone	2.6J	ug/kg	18.2	02/09/18 13:54	
10419905003	**Trip Blank**					
EPA 8260B	Chloroform	0.89J	ug/kg	4.0	02/09/18 13:16	

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PROJECT NARRATIVE

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 12, 2018

General Information:
3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035 Low with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 522235

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCSD (Lab ID: 2835394)
  - Chloroethane

R1: RPD value was outside control limits.

- LCSD (Lab ID: 2835394)
  - 1,2-Dibromoethane (EDB)
  - 2-Butanone (MEK)
  - 2-Hexanone
  - 4-Methyl-2-pentanone (MIBK)
  - Acetone
  - Chloromethane
  - Naphthalene
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 12, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 522235

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Sump-O-020618 **Lab ID: 10419905001** Collected: 02/06/18 13:35 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**26.0**	%	0.10	0.10	1		02/09/18 10:48		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.92**	ug/kg	4.9	0.92	1	02/09/18 10:40	02/09/18 13:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.67**	ug/kg	4.9	0.67	1	02/09/18 10:40	02/09/18 13:35	79-34-5	
1,1,2-Trichloroethane	**<0.85**	ug/kg	4.9	0.85	1	02/09/18 10:40	02/09/18 13:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.89**	ug/kg	4.9	0.89	1	02/09/18 10:40	02/09/18 13:35	76-13-1	
1,1-Dichloroethane	**<0.88**	ug/kg	4.9	0.88	1	02/09/18 10:40	02/09/18 13:35	75-34-3	
1,1-Dichloroethene	**<0.70**	ug/kg	4.9	0.70	1	02/09/18 10:40	02/09/18 13:35	75-35-4	
1,2,4-Trichlorobenzene	**<2.0**	ug/kg	4.9	2.0	1	02/09/18 10:40	02/09/18 13:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.24**	ug/kg	4.9	0.24	1	02/09/18 10:40	02/09/18 13:35	95-63-6	
1,2-Dibromoethane (EDB)	**<0.97**	ug/kg	4.9	0.97	1	02/09/18 10:40	02/09/18 13:35	106-93-4	
1,2-Dichlorobenzene	**<0.78**	ug/kg	4.9	0.78	1	02/09/18 10:40	02/09/18 13:35	95-50-1	
1,2-Dichloroethane	**<0.87**	ug/kg	4.9	0.87	1	02/09/18 10:40	02/09/18 13:35	107-06-2	
1,3,5-Trimethylbenzene	**<0.59**	ug/kg	4.9	0.59	1	02/09/18 10:40	02/09/18 13:35	108-67-8	
1,3-Dichlorobenzene	**<0.64**	ug/kg	4.9	0.64	1	02/09/18 10:40	02/09/18 13:35	541-73-1	
1,4-Dichlorobenzene	**<0.71**	ug/kg	4.9	0.71	1	02/09/18 10:40	02/09/18 13:35	106-46-7	
2-Butanone (MEK)	**<3.8**	ug/kg	24.6	3.8	1	02/09/18 10:40	02/09/18 13:35	78-93-3	
2-Hexanone	**<2.9**	ug/kg	24.6	2.9	1	02/09/18 10:40	02/09/18 13:35	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.2**	ug/kg	24.6	3.2	1	02/09/18 10:40	02/09/18 13:35	108-10-1	
Acetone	**<10.3**	ug/kg	61.6	10.3	1	02/09/18 10:40	02/09/18 13:35	67-64-1	
Benzene	**<0.68**	ug/kg	4.9	0.68	1	02/09/18 10:40	02/09/18 13:35	71-43-2	
Bromodichloromethane	**<0.78**	ug/kg	4.9	0.78	1	02/09/18 10:40	02/09/18 13:35	75-27-4	
Bromoform	**<3.2**	ug/kg	24.6	3.2	1	02/09/18 10:40	02/09/18 13:35	75-25-2	
Bromomethane	**<4.3**	ug/kg	24.6	4.3	1	02/09/18 10:40	02/09/18 13:35	74-83-9	
Carbon tetrachloride	**<0.68**	ug/kg	4.9	0.68	1	02/09/18 10:40	02/09/18 13:35	56-23-5	
Chlorobenzene	**<0.74**	ug/kg	4.9	0.74	1	02/09/18 10:40	02/09/18 13:35	108-90-7	
Chloroethane	**<1.9**	ug/kg	12.3	1.9	1	02/09/18 10:40	02/09/18 13:35	75-00-3	
Chloroform	**<0.97**	ug/kg	4.9	0.97	1	02/09/18 10:40	02/09/18 13:35	67-66-3	
Chloromethane	**<2.2**	ug/kg	12.3	2.2	1	02/09/18 10:40	02/09/18 13:35	74-87-3	
Dibromochloromethane	**<0.25**	ug/kg	4.9	0.25	1	02/09/18 10:40	02/09/18 13:35	124-48-1	
Dichlorodifluoromethane	**<4.7**	ug/kg	12.3	4.7	1	02/09/18 10:40	02/09/18 13:35	75-71-8	
Ethylbenzene	**<0.90**	ug/kg	4.9	0.90	1	02/09/18 10:40	02/09/18 13:35	100-41-4	
Hexachloro-1,3-butadiene	**<3.2**	ug/kg	12.3	3.2	1	02/09/18 10:40	02/09/18 13:35	87-68-3	
Methyl-tert-butyl ether	**<0.73**	ug/kg	4.9	0.73	1	02/09/18 10:40	02/09/18 13:35	1634-04-4	
Methylene Chloride	**<2.8**	ug/kg	24.6	2.8	1	02/09/18 10:40	02/09/18 13:35	75-09-2	
Naphthalene	**<1.8**	ug/kg	12.3	1.8	1	02/09/18 10:40	02/09/18 13:35	91-20-3	
Styrene	**<0.52**	ug/kg	4.9	0.52	1	02/09/18 10:40	02/09/18 13:35	100-42-5	
Tetrachloroethene	**<0.64**	ug/kg	4.9	0.64	1	02/09/18 10:40	02/09/18 13:35	127-18-4	
Tetrahydrofuran	**<11.3**	ug/kg	49.2	11.3	1	02/09/18 10:40	02/09/18 13:35	109-99-9	
Toluene	**<1.4**	ug/kg	4.9	1.4	1	02/09/18 10:40	02/09/18 13:35	108-88-3	
Trichloroethene	**<0.14**	ug/kg	4.9	0.14	1	02/09/18 10:40	02/09/18 13:35	79-01-6	
Trichlorofluoromethane	**<2.1**	ug/kg	12.3	2.1	1	02/09/18 10:40	02/09/18 13:35	75-69-4	
Vinyl acetate	**<2.4**	ug/kg	12.3	2.4	1	02/09/18 10:40	02/09/18 13:35	108-05-4	
Vinyl chloride	**<1.2**	ug/kg	4.9	1.2	1	02/09/18 10:40	02/09/18 13:35	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Sump-O-020618 **Lab ID: 10419905001** Collected: 02/06/18 13:35 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.84**	ug/kg	4.9	0.84	1	02/09/18 10:40	02/09/18 13:35	156-59-2	
cis-1,3-Dichloropropene	**<2.3**	ug/kg	4.9	2.3	1	02/09/18 10:40	02/09/18 13:35	10061-01-5	
m&p-Xylene	**<1.3**	ug/kg	9.8	1.3	1	02/09/18 10:40	02/09/18 13:35	179601-23-1	
o-Xylene	**<0.59**	ug/kg	4.9	0.59	1	02/09/18 10:40	02/09/18 13:35	95-47-6	
trans-1,2-Dichloroethene	**<0.87**	ug/kg	4.9	0.87	1	02/09/18 10:40	02/09/18 13:35	156-60-5	
trans-1,3-Dichloropropene	**<0.90**	ug/kg	4.9	0.90	1	02/09/18 10:40	02/09/18 13:35	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-126		1	02/09/18 10:40	02/09/18 13:35	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	02/09/18 10:40	02/09/18 13:35	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-128		1	02/09/18 10:40	02/09/18 13:35	460-00-4	

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Sump-3-020618 **Lab ID: 10419905002** Collected: 02/06/18 13:45 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**15.2**	%	0.10	0.10	1		02/09/18 10:48		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.68**	ug/kg	3.6	0.68	1	02/09/18 10:40	02/09/18 13:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.49**	ug/kg	3.6	0.49	1	02/09/18 10:40	02/09/18 13:54	79-34-5	
1,1,2-Trichloroethane	**<0.63**	ug/kg	3.6	0.63	1	02/09/18 10:40	02/09/18 13:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.66**	ug/kg	3.6	0.66	1	02/09/18 10:40	02/09/18 13:54	76-13-1	
1,1-Dichloroethane	**<0.65**	ug/kg	3.6	0.65	1	02/09/18 10:40	02/09/18 13:54	75-34-3	
1,1-Dichloroethene	**<0.52**	ug/kg	3.6	0.52	1	02/09/18 10:40	02/09/18 13:54	75-35-4	
1,2,4-Trichlorobenzene	**<1.5**	ug/kg	3.6	1.5	1	02/09/18 10:40	02/09/18 13:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.18**	ug/kg	3.6	0.18	1	02/09/18 10:40	02/09/18 13:54	95-63-6	
1,2-Dibromoethane (EDB)	**<0.71**	ug/kg	3.6	0.71	1	02/09/18 10:40	02/09/18 13:54	106-93-4	
1,2-Dichlorobenzene	**<0.57**	ug/kg	3.6	0.57	1	02/09/18 10:40	02/09/18 13:54	95-50-1	
1,2-Dichloroethane	**<0.64**	ug/kg	3.6	0.64	1	02/09/18 10:40	02/09/18 13:54	107-06-2	
1,3,5-Trimethylbenzene	**<0.44**	ug/kg	3.6	0.44	1	02/09/18 10:40	02/09/18 13:54	108-67-8	
1,3-Dichlorobenzene	**<0.47**	ug/kg	3.6	0.47	1	02/09/18 10:40	02/09/18 13:54	541-73-1	
1,4-Dichlorobenzene	**<0.52**	ug/kg	3.6	0.52	1	02/09/18 10:40	02/09/18 13:54	106-46-7	
2-Butanone (MEK)	**<2.8**	ug/kg	18.2	2.8	1	02/09/18 10:40	02/09/18 13:54	78-93-3	
2-Hexanone	**2.6J**	ug/kg	18.2	2.1	1	02/09/18 10:40	02/09/18 13:54	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.4**	ug/kg	18.2	2.4	1	02/09/18 10:40	02/09/18 13:54	108-10-1	
Acetone	**<7.6**	ug/kg	45.4	7.6	1	02/09/18 10:40	02/09/18 13:54	67-64-1	
Benzene	**<0.50**	ug/kg	3.6	0.50	1	02/09/18 10:40	02/09/18 13:54	71-43-2	
Bromodichloromethane	**<0.57**	ug/kg	3.6	0.57	1	02/09/18 10:40	02/09/18 13:54	75-27-4	
Bromoform	**<2.3**	ug/kg	18.2	2.3	1	02/09/18 10:40	02/09/18 13:54	75-25-2	
Bromomethane	**<3.2**	ug/kg	18.2	3.2	1	02/09/18 10:40	02/09/18 13:54	74-83-9	
Carbon tetrachloride	**<0.50**	ug/kg	3.6	0.50	1	02/09/18 10:40	02/09/18 13:54	56-23-5	
Chlorobenzene	**<0.54**	ug/kg	3.6	0.54	1	02/09/18 10:40	02/09/18 13:54	108-90-7	
Chloroethane	**<1.4**	ug/kg	9.1	1.4	1	02/09/18 10:40	02/09/18 13:54	75-00-3	
Chloroform	**<0.71**	ug/kg	3.6	0.71	1	02/09/18 10:40	02/09/18 13:54	67-66-3	
Chloromethane	**<1.6**	ug/kg	9.1	1.6	1	02/09/18 10:40	02/09/18 13:54	74-87-3	
Dibromochloromethane	**<0.19**	ug/kg	3.6	0.19	1	02/09/18 10:40	02/09/18 13:54	124-48-1	
Dichlorodifluoromethane	**<3.4**	ug/kg	9.1	3.4	1	02/09/18 10:40	02/09/18 13:54	75-71-8	
Ethylbenzene	**<0.67**	ug/kg	3.6	0.67	1	02/09/18 10:40	02/09/18 13:54	100-41-4	
Hexachloro-1,3-butadiene	**<2.4**	ug/kg	9.1	2.4	1	02/09/18 10:40	02/09/18 13:54	87-68-3	
Methyl-tert-butyl ether	**<0.54**	ug/kg	3.6	0.54	1	02/09/18 10:40	02/09/18 13:54	1634-04-4	
Methylene Chloride	**<2.1**	ug/kg	18.2	2.1	1	02/09/18 10:40	02/09/18 13:54	75-09-2	
Naphthalene	**<1.3**	ug/kg	9.1	1.3	1	02/09/18 10:40	02/09/18 13:54	91-20-3	
Styrene	**<0.38**	ug/kg	3.6	0.38	1	02/09/18 10:40	02/09/18 13:54	100-42-5	
Tetrachloroethene	**<0.47**	ug/kg	3.6	0.47	1	02/09/18 10:40	02/09/18 13:54	127-18-4	
Tetrahydrofuran	**<8.3**	ug/kg	36.3	8.3	1	02/09/18 10:40	02/09/18 13:54	109-99-9	
Toluene	**<1.0**	ug/kg	3.6	1.0	1	02/09/18 10:40	02/09/18 13:54	108-88-3	
Trichloroethene	**<0.10**	ug/kg	3.6	0.10	1	02/09/18 10:40	02/09/18 13:54	79-01-6	
Trichlorofluoromethane	**<1.5**	ug/kg	9.1	1.5	1	02/09/18 10:40	02/09/18 13:54	75-69-4	
Vinyl acetate	**<1.8**	ug/kg	9.1	1.8	1	02/09/18 10:40	02/09/18 13:54	108-05-4	
Vinyl chloride	**<0.86**	ug/kg	3.6	0.86	1	02/09/18 10:40	02/09/18 13:54	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Sump-3-020618 **Lab ID: 10419905002** Collected: 02/06/18 13:45 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.62**	ug/kg	3.6	0.62	1	02/09/18 10:40	02/09/18 13:54	156-59-2	
cis-1,3-Dichloropropene	**<1.7**	ug/kg	3.6	1.7	1	02/09/18 10:40	02/09/18 13:54	10061-01-5	
m&p-Xylene	**<0.95**	ug/kg	7.3	0.95	1	02/09/18 10:40	02/09/18 13:54	179601-23-1	
o-Xylene	**<0.43**	ug/kg	3.6	0.43	1	02/09/18 10:40	02/09/18 13:54	95-47-6	
trans-1,2-Dichloroethene	**<0.64**	ug/kg	3.6	0.64	1	02/09/18 10:40	02/09/18 13:54	156-60-5	
trans-1,3-Dichloropropene	**<0.67**	ug/kg	3.6	0.67	1	02/09/18 10:40	02/09/18 13:54	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	84	%.	75-126		1	02/09/18 10:40	02/09/18 13:54	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	02/09/18 10:40	02/09/18 13:54	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-128		1	02/09/18 10:40	02/09/18 13:54	460-00-4	

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Trip Blank **Lab ID: 10419905003** Collected: 02/06/18 00:00 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.75**	ug/kg	4.0	0.75	1	02/09/18 10:40	02/09/18 13:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.54**	ug/kg	4.0	0.54	1	02/09/18 10:40	02/09/18 13:16	79-34-5	
1,1,2-Trichloroethane	**<0.69**	ug/kg	4.0	0.69	1	02/09/18 10:40	02/09/18 13:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.72**	ug/kg	4.0	0.72	1	02/09/18 10:40	02/09/18 13:16	76-13-1	
1,1-Dichloroethane	**<0.72**	ug/kg	4.0	0.72	1	02/09/18 10:40	02/09/18 13:16	75-34-3	
1,1-Dichloroethene	**<0.57**	ug/kg	4.0	0.57	1	02/09/18 10:40	02/09/18 13:16	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.0	1.6	1	02/09/18 10:40	02/09/18 13:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	4.0	0.19	1	02/09/18 10:40	02/09/18 13:16	95-63-6	
1,2-Dibromoethane (EDB)	**<0.78**	ug/kg	4.0	0.78	1	02/09/18 10:40	02/09/18 13:16	106-93-4	
1,2-Dichlorobenzene	**<0.63**	ug/kg	4.0	0.63	1	02/09/18 10:40	02/09/18 13:16	95-50-1	
1,2-Dichloroethane	**<0.71**	ug/kg	4.0	0.71	1	02/09/18 10:40	02/09/18 13:16	107-06-2	
1,3,5-Trimethylbenzene	**<0.48**	ug/kg	4.0	0.48	1	02/09/18 10:40	02/09/18 13:16	108-67-8	
1,3-Dichlorobenzene	**<0.52**	ug/kg	4.0	0.52	1	02/09/18 10:40	02/09/18 13:16	541-73-1	
1,4-Dichlorobenzene	**<0.58**	ug/kg	4.0	0.58	1	02/09/18 10:40	02/09/18 13:16	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	20.0	3.1	1	02/09/18 10:40	02/09/18 13:16	78-93-3	
2-Hexanone	**<2.3**	ug/kg	20.0	2.3	1	02/09/18 10:40	02/09/18 13:16	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.0	2.6	1	02/09/18 10:40	02/09/18 13:16	108-10-1	
Acetone	**<8.3**	ug/kg	50.0	8.3	1	02/09/18 10:40	02/09/18 13:16	67-64-1	
Benzene	**<0.55**	ug/kg	4.0	0.55	1	02/09/18 10:40	02/09/18 13:16	71-43-2	
Bromodichloromethane	**<0.63**	ug/kg	4.0	0.63	1	02/09/18 10:40	02/09/18 13:16	75-27-4	
Bromoform	**<2.6**	ug/kg	20.0	2.6	1	02/09/18 10:40	02/09/18 13:16	75-25-2	
Bromomethane	**<3.5**	ug/kg	20.0	3.5	1	02/09/18 10:40	02/09/18 13:16	74-83-9	
Carbon tetrachloride	**<0.56**	ug/kg	4.0	0.56	1	02/09/18 10:40	02/09/18 13:16	56-23-5	
Chlorobenzene	**<0.60**	ug/kg	4.0	0.60	1	02/09/18 10:40	02/09/18 13:16	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.0	1.6	1	02/09/18 10:40	02/09/18 13:16	75-00-3	
Chloroform	**0.89J**	ug/kg	4.0	0.78	1	02/09/18 10:40	02/09/18 13:16	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.0	1.8	1	02/09/18 10:40	02/09/18 13:16	74-87-3	
Dibromochloromethane	**<0.20**	ug/kg	4.0	0.20	1	02/09/18 10:40	02/09/18 13:16	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	10.0	3.8	1	02/09/18 10:40	02/09/18 13:16	75-71-8	
Ethylbenzene	**<0.73**	ug/kg	4.0	0.73	1	02/09/18 10:40	02/09/18 13:16	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	10.0	2.6	1	02/09/18 10:40	02/09/18 13:16	87-68-3	
Methyl-tert-butyl ether	**<0.59**	ug/kg	4.0	0.59	1	02/09/18 10:40	02/09/18 13:16	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.0	2.3	1	02/09/18 10:40	02/09/18 13:16	75-09-2	
Naphthalene	**<1.4**	ug/kg	10.0	1.4	1	02/09/18 10:40	02/09/18 13:16	91-20-3	
Styrene	**<0.42**	ug/kg	4.0	0.42	1	02/09/18 10:40	02/09/18 13:16	100-42-5	
Tetrachloroethene	**<0.52**	ug/kg	4.0	0.52	1	02/09/18 10:40	02/09/18 13:16	127-18-4	
Tetrahydrofuran	**<9.1**	ug/kg	40.0	9.1	1	02/09/18 10:40	02/09/18 13:16	109-99-9	
Toluene	**<1.1**	ug/kg	4.0	1.1	1	02/09/18 10:40	02/09/18 13:16	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.0	0.11	1	02/09/18 10:40	02/09/18 13:16	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.0	1.7	1	02/09/18 10:40	02/09/18 13:16	75-69-4	
Vinyl acetate	**<1.9**	ug/kg	10.0	1.9	1	02/09/18 10:40	02/09/18 13:16	108-05-4	
Vinyl chloride	**<0.95**	ug/kg	4.0	0.95	1	02/09/18 10:40	02/09/18 13:16	75-01-4	
cis-1,2-Dichloroethene	**<0.68**	ug/kg	4.0	0.68	1	02/09/18 10:40	02/09/18 13:16	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.0	1.9	1	02/09/18 10:40	02/09/18 13:16	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	8.0	1.0	1	02/09/18 10:40	02/09/18 13:16	179601-23-1	

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Sample: Trip Blank **Lab ID: 10419905003** Collected: 02/06/18 00:00 Received: 02/08/18 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
o-Xylene	**<0.48**	ug/kg	4.0	0.48	1	02/09/18 10:40	02/09/18 13:16	95-47-6	
trans-1,2-Dichloroethene	**<0.71**	ug/kg	4.0	0.71	1	02/09/18 10:40	02/09/18 13:16	156-60-5	
trans-1,3-Dichloropropene	**<0.73**	ug/kg	4.0	0.73	1	02/09/18 10:40	02/09/18 13:16	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-126		1	02/09/18 10:40	02/09/18 13:16	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	02/09/18 10:40	02/09/18 13:16	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-128		1	02/09/18 10:40	02/09/18 13:16	460-00-4	

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QUALITY CONTROL DATA

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

QC Batch: 522160
Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10419905001, 10419905002

SAMPLE DUPLICATE: 2834839

Parameter	Units	10419751002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.7	20.4	8	30	

SAMPLE DUPLICATE: 2834918

Parameter	Units	10419905002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.2	15.7	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

QC Batch: 522235 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10419905001, 10419905002, 10419905003

METHOD BLANK: 2835392 Matrix: Solid
Associated Lab Samples: 10419905001, 10419905002, 10419905003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	02/09/18 12:38	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	02/09/18 12:38	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	02/09/18 12:38	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	02/09/18 12:38	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	02/09/18 12:38	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	02/09/18 12:38	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	02/09/18 12:38	
1,2,4-Trimethylbenzene	ug/kg	<0.19	4.0	0.19	02/09/18 12:38	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	02/09/18 12:38	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	02/09/18 12:38	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	02/09/18 12:38	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	02/09/18 12:38	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	02/09/18 12:38	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	02/09/18 12:38	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	02/09/18 12:38	
2-Hexanone	ug/kg	<2.3	20.0	2.3	02/09/18 12:38	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	02/09/18 12:38	
Acetone	ug/kg	<8.3	50.0	8.3	02/09/18 12:38	MN
Benzene	ug/kg	<0.55	4.0	0.55	02/09/18 12:38	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	02/09/18 12:38	
Bromoform	ug/kg	<2.6	20.0	2.6	02/09/18 12:38	
Bromomethane	ug/kg	<3.5	20.0	3.5	02/09/18 12:38	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	02/09/18 12:38	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	02/09/18 12:38	
Chloroethane	ug/kg	<1.6	10.0	1.6	02/09/18 12:38	
Chloroform	ug/kg	<0.78	4.0	0.78	02/09/18 12:38	
Chloromethane	ug/kg	<1.8	10.0	1.8	02/09/18 12:38	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	02/09/18 12:38	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	02/09/18 12:38	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	02/09/18 12:38	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	02/09/18 12:38	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	02/09/18 12:38	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	02/09/18 12:38	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	02/09/18 12:38	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	02/09/18 12:38	
Methylene Chloride	ug/kg	<2.3	20.0	2.3	02/09/18 12:38	
Naphthalene	ug/kg	<1.4	10.0	1.4	02/09/18 12:38	
o-Xylene	ug/kg	<0.48	4.0	0.48	02/09/18 12:38	
Styrene	ug/kg	<0.42	4.0	0.42	02/09/18 12:38	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	02/09/18 12:38	
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	02/09/18 12:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

METHOD BLANK: 2835392 Matrix: Solid

Associated Lab Samples: 10419905001, 10419905002, 10419905003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	ug/kg	<1.1	4.0	1.1	02/09/18 12:38	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	02/09/18 12:38	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	02/09/18 12:38	
Trichloroethene	ug/kg	<0.11	4.0	0.11	02/09/18 12:38	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	02/09/18 12:38	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	02/09/18 12:38	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	02/09/18 12:38	
1,2-Dichloroethane-d4 (S)	%.	98	75-126		02/09/18 12:38	
4-Bromofluorobenzene (S)	%.	97	75-128		02/09/18 12:38	
Toluene-d8 (S)	%.	98	75-125		02/09/18 12:38	

LABORATORY CONTROL SAMPLE & LCSD: 2835393 2835394

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	19.0	22.3	95	111	75-125	16	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	18.4	22.2	92	111	67-125	19	20	
1,1,2-Trichloroethane	ug/kg	20	19.1	23.2	95	116	75-125	19	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	20.5	23.1	103	116	70-125	12	20	
1,1-Dichloroethane	ug/kg	20	19.1	22.6	96	113	70-125	17	20	
1,1-Dichloroethene	ug/kg	20	19.8	22.4	99	112	67-125	12	20	
1,2,4-Trichlorobenzene	ug/kg	20	18.5	21.5	92	108	75-125	15	20	
1,2,4-Trimethylbenzene	ug/kg	20	18.5	21.4	93	107	75-125	14	20	
1,2-Dibromoethane (EDB)	ug/kg	20	18.8	23.1	94	115	75-125	21	20	R1
1,2-Dichlorobenzene	ug/kg	20	19.4	22.8	97	114	75-125	16	20	
1,2-Dichloroethane	ug/kg	20	17.6	21.4	88	107	74-125	19	20	
1,3,5-Trimethylbenzene	ug/kg	20	19.5	22.5	98	113	75-125	14	20	
1,3-Dichlorobenzene	ug/kg	20	20.1	23.0	100	115	75-125	14	20	
1,4-Dichlorobenzene	ug/kg	20	19.9	22.9	99	115	75-125	14	20	
2-Butanone (MEK)	ug/kg	100	86.6	109	87	109	56-134	23	20	R1
2-Hexanone	ug/kg	100	83.1	106	83	106	71-125	24	20	R1
4-Methyl-2-pentanone (MIBK)	ug/kg	100	85.9	110	86	110	71-125	25	20	R1
Acetone	ug/kg	100	99.4	123	99	123	30-150	22	20	R1
Benzene	ug/kg	20	19.0	22.1	95	110	69-125	15	20	
Bromodichloromethane	ug/kg	20	17.9	21.5	89	107	75-125	18	20	
Bromoform	ug/kg	20	17.2J	21.1	86	106	75-125		20	
Bromomethane	ug/kg	20	20.6	22.4	103	112	67-131	9	20	
Carbon tetrachloride	ug/kg	20	20.1	22.4	101	112	75-125	11	20	
Chlorobenzene	ug/kg	20	20.3	23.2	101	116	75-125	14	20	
Chloroethane	ug/kg	20	22.1	26.2	111	131	63-125	17	20	L3
Chloroform	ug/kg	20	18.4	20.9	92	104	75-125	13	20	
Chloromethane	ug/kg	20	19.7	24.2	98	121	30-150	21	20	R1
cis-1,2-Dichloroethene	ug/kg	20	19.2	21.9	96	110	72-125	13	20	
cis-1,3-Dichloropropene	ug/kg	20	18.2	21.4	91	107	73-125	17	20	
Dibromochloromethane	ug/kg	20	18.3	22.1	91	111	75-125	19	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

LABORATORY CONTROL SAMPLE & LCSD: 2835393 2835394

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	ug/kg	20	21.5	24.2	107	121	55-134	12	20	
Ethylbenzene	ug/kg	20	19.8	22.6	99	113	75-125	13	20	
Hexachloro-1,3-butadiene	ug/kg	20	19.8	22.6	99	113	75-125	13	20	
m&p-Xylene	ug/kg	40	39.9	45.7	100	114	75-125	14	20	
Methyl-tert-butyl ether	ug/kg	20	17.9	21.5	89	107	70-125	18	20	
Methylene Chloride	ug/kg	20	20.2	23.0	101	115	58-134	13	20	
Naphthalene	ug/kg	20	16.7	21.4	83	107	66-125	25	20	R1
o-Xylene	ug/kg	20	19.3	22.2	96	111	75-125	14	20	
Styrene	ug/kg	20	19.7	22.9	99	114	75-125	15	20	
Tetrachloroethene	ug/kg	20	21.1	24.1	105	120	72-125	13	20	
Tetrahydrofuran	ug/kg	200	182	225	91	113	36-146	21	20	R1
Toluene	ug/kg	20	18.6	21.3	93	106	75-125	13	20	
trans-1,2-Dichloroethene	ug/kg	20	19.3	22.0	96	110	69-125	13	20	
trans-1,3-Dichloropropene	ug/kg	20	18.6	22.3	93	111	75-125	18	20	
Trichloroethene	ug/kg	20	20.8	24.4	104	122	75-125	16	20	
Trichlorofluoromethane	ug/kg	20	21.1	23.6	106	118	72-127	11	20	
Vinyl acetate	ug/kg	20	19.3	20.4	96	102	69-125	6	20	
Vinyl chloride	ug/kg	20	21.7	24.4	109	122	67-127	11	20	
1,2-Dichloroethane-d4 (S)	%.				94	96	75-126			
4-Bromofluorobenzene (S)	%.				96	96	75-128			
Toluene-d8 (S)	%.				99	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	661508 UPRR Freeman
Pace Project No.:	10419905

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 522451

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

R1 RPD value was outside control limits.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5035 Low Level	Solid	SW-846 8260B	SW-846 5035A/5030B

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Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 661508 UPRR Freeman
Pace Project No.: 10419905

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10419905001	**Sump-O-020618**	ASTM D2974	522160		
10419905002	**Sump-3-020618**	ASTM D2974	522160		
10419905001	**Sump-O-020618**	EPA 5035 Low	522235	EPA 8260B	522451
10419905002	**Sump-3-020618**	EPA 5035 Low	522235	EPA 8260B	522451
10419905003	**Trip Blank**	EPA 5035 Low	522235	EPA 8260B	522451

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CHAIN-OF-CUSTODY / Analytical Request Docu

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed acc

WO#: 10419905

PM: JMG Due Date: 02/12/18
CLIENT: UPRR_CH2M

Section A Required Client Information:

Company:	CH2M
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	5-day

Section B Required Project Information:

Report To:	Dave Hodson
Copy To:	Mark Ochsner
Purchase Order No.:	
Project Name:	UPRR Freeman
Project Number:	061508

Section C Invoice Information:

Attention:	
Company Name:	UPRR
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

21949-1

REGULATORY AGENCY
- NPDES
- GROUND WATER
- DRINKING WATER
- UST
- RCRA
- OTHER

Site Location STATE: WA

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

MATRIX CODE (see valid codes to left); SAMPLE TYPE (G=GRAB C=COMP)

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260B	Moisture Content	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Sump-0-020618	SL	G	—	—	2-6-18	1335	—	5	1					2	2			X	X		001
2	Sump-3-020618	SL	G	—	—	2-6-18	1345	—	5	1					2	2			X	X		002
3	Trip Blank								4						2	2			X			003
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / CH2M on behalf of Steve Demus	2/7/18	1530	[signature] Pace	2/8/18	1015	0.9	Y	Y	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steve Demus

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2/7/18

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M UPRR **Project #:**

WO# : 10419905

10419905

Optional: Proj. Due Date: Proj. Name:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4249 3595 7630

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other: foam **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.1 **Cooler Temp Corrected (°C):** 0.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** MZ 2/8/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☑ Yes	☐ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	~~Yes~~ MZ 2/8/18	☑ No		12. No ID on Container ID was on Bags they arrived in
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. 2 VG9M 2 VG9B Trip Blank
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 050117-32Q				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1200	Temp: 1.1	Corrected Temp: 0.9
Time: 1208	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 02/09/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s[...] will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 14, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: Media Return
Pace Project No.: 10420013

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on February 07, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
1(612)607-6390
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: Media Return
Pace Project No.: 10420013

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10420013001	**Unused FC #0747**	Air		02/07/18 11:40
10420013002	**Unused FC #1048**	Air		02/07/18 11:40
10420013003	**Unused FC #0746**	Air		02/07/18 11:40

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical™

Media Order # 1028975

WO#: 10420013
PM: CB Due Date: 02/14/18
CLIENT: UPRR_CH2M

Ordered By:	Ship To:	
Contact: Chase Holten	**Contact:** Steve Demus	**Contact:** Sample Receiving
Company: UPRR_CH2M Hill	**Company:** CH2M HILL	**Lab Name:** PACE - MN
Address: 9193 South Jamaica Street	**Address:** 999 W. Riverside Ave. Suite 500	**Address:** 1700 Elm Street Ste 200
City, St, ZIP: Englewood, CO, 80112	**City, St, ZIP:** Spokane, WA, 99201	**City, St, ZIP:** Minneapolis, MN, 55414
Phone: 480-435-1887	**Phone:** 509-944-1785	**Phone:** 612-607-1700

Initiator: Aaron Fredrikson **PM:** Chris Bremer **Profile Number:** 37080 #1
Proj. Description: Freeman, Washington **Quote Number:** **Shipping Method:** FedEx
Needs Bottles By: 8/31/2017 PM **Expected Return Date:** 9/6/2017 **Tracking #:**

Return Shipping Labels	***CoC's***	***Bottle Labels***	***Bottles***
☐ No Shipper Number	☒ Blank # 1	☐ Blank	☐ Boxed Cases
☒ With Shipper Number	☐ Preprinted	☐ Pre-Printed - With Sample IDs	☐ Individually Wrapped
		☐ Pre-Printed - No Sample IDs	☐ Grouped By Sample ID/Matrix

Miscellaneous

☐ Sampling Instructions	☐ Coolers	☐ Short Hold/Rush Stickers
☐ Custody Seal	☐ Extra Bubble Wrap	☐ DI Water
☐ Temperature Blanks	☐ 10 mL Cut-Off Syringes	

☐ Trip Blank

Notes:

Qty	Method	Media Specification	Certification Level	Notes
7	TO-15 SIM Scan	6 L Canister	Individual Cert	Individual Cert (Indoor Air) TO-15 SIM
6	Canister Attachments	Flow Controller with Gauge (specify setting)		24 hour (client already has Tee Fitting)
2	TO-15	1 L Canister	Low Level (0.1 - 0.2 ppbv)	Batch Cert for Dup.
1	Canister Attachments	Flow Controller with Gauge (specify setting)		200 mL/min for Dup (client already has Tee

AA PACE 2-7-18 1140

Hazard Shipping Placard In Place:

*Sample receiving hours are Monday through Friday 8:00 am to 6:00 pm and Saturday from 9:00 am to 12:00 pm unless special arrangements are made with you project manager.
*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.
*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage and disposal.
*Payment term are net 30 days.
*Please include the proposal number on the chain of custody to insure proper billing

Pace Analytical	Document Name: Air Sample Condition Upon Receipt	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: F-MN-A-106-rev.14	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: UPRR CH2M Hill

Project #: WO# : 10420013

10420013

Courier: [X] Fed Ex [ ] UPS [ ] Speedee [ ] Client [ ] Commercial [ ] Pace [ ] Other: ______

Tracking Number: 7021 45757590

Custody Seal on Cooler/Box Present? [ ] Yes [X] No **Seals Intact?** [ ] Yes [X] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [X] Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [ ] Tin Can [ ] Other: ______ **Temp Blank rec:** [ ] Yes [X] No

Temp. (TO17 and TO13 samples only) (°C): — **Corrected Temp (°C):** — **Thermom. Used:** [ ] 151401163 [ ] G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** — **Date & Initials of Person Examining Contents:** RG 2/8/18

Type of Ice Received [ ] Blue [ ] Wet [X] None

				Comments:
Chain of Custody Present?	[ ] Yes	[ ] No	[X] N/A	1.
Chain of Custody Filled Out?	[ ] Yes	[ ] No	[X] N/A	2.
Chain of Custody Relinquished?	[ ] Yes	[ ] No	[X] N/A	3.
Sampler Name and/or Signature on COC?	[ ] Yes	[ ] No	[X] N/A	4.
Samples Arrived within Hold Time?	[ ] Yes	[ ] No	[X] N/A	5.
Short Hold Time Analysis (<72 hr)?	[ ] Yes	[ ] No	[X] N/A	6.
Rush Turn Around Time Requested?	[ ] Yes	[ ] No	[X] N/A	7.
Sufficient Volume?	[ ] Yes	[ ] No	[X] N/A	8.
Correct Containers Used?	[ ] Yes	[ ] No	[X] N/A	9.
-Pace Containers Used?	[ ] Yes	[ ] No	[X] N/A	
Containers Intact? Flow controllers	[X] Yes	[ ] No	[ ] N/A	10.
Media: ~~Air Can~~ Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	[ ] Yes	[ ] No	[X] N/A	12.

Samples Received: 1 T-Fitting Pressure Gauge # 10AIR26

Canisters: Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Canisters: Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
unused FC		0747							
"		1048							
"		0746							

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** [ ] Yes [ ] No

Person Contacted: ______ Date/Time: ______

Comments/Resolution: ______

Project Manager Review: ______ **Date:** ______

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 23, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
1(612)607-6390
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman WA Grain Facility
Pace Project No.:	10420077

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10420077001	**SV104A-5'**	Air	02/07/18 09:10	02/09/18 10:15
10420077002	**SV104A-15'**	Air	02/07/18 09:09	02/09/18 10:15
10420077003	**SV104B-22'**	Air	02/07/18 09:11	02/09/18 10:15
10420077004	**SV104B-27'**	Air	02/07/18 09:11	02/09/18 10:15
10420077005	**SV103A-5'**	Air	02/07/18 09:16	02/09/18 10:15
10420077006	**SV102A-15'**	Air	02/07/18 09:18	02/09/18 10:15
10420077007	**SV101B-25'**	Air	02/07/18 11:22	02/09/18 10:15
10420077008	**SV101A-5'**	Air	02/07/18 11:50	02/09/18 10:15
10420077009	**SV102A-5'**	Air	02/07/18 11:58	02/09/18 10:15
10420077010	**DUP-1**	Air	02/07/18 00:00	02/09/18 10:15
10420077011	**Unused Can #2745**	Air	02/07/18 00:00	02/09/18 10:15
10420077012	**Unused Can #2748**	Air	02/07/18 00:00	02/09/18 10:15
10420077013	**Unused Can #1205**	Air	02/07/18 00:00	02/09/18 10:15
10420077014	**Unused Can #1279**	Air	02/07/18 00:00	02/09/18 10:15
10420077015	**Unused Can #1033**	Air	02/07/18 00:00	02/09/18 10:15
10420077016	**Unused Can #2819**	Air	02/07/18 00:00	02/09/18 10:15
10420077017	**Unused Can #2295**	Air	02/07/18 00:00	02/09/18 10:15
10420077018	**Unused Can #0664**	Air	02/07/18 00:00	02/09/18 10:15
10420077019	**Unused Can #2683**	Air	02/07/18 00:00	02/09/18 10:15
10420077020	**Unused Can #0818**	Air	02/07/18 00:00	02/09/18 10:15

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SAMPLE ANALYTE COUNT

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10420077001	**SV104A-5'**	TO-15	AFV, NCK	61	PASI-M
10420077002	**SV104A-15'**	TO-15	AFV, NCK	61	PASI-M
10420077003	**SV104B-22'**	TO-15	AFV, NCK	61	PASI-M
10420077004	**SV104B-27'**	TO-15	AFV, NCK	61	PASI-M
10420077005	**SV103A-5'**	TO-15	NCK	61	PASI-M
10420077006	**SV102A-15'**	TO-15	NCK	61	PASI-M
10420077007	**SV101B-25'**	TO-15	NCK	61	PASI-M
10420077008	**SV101A-5'**	TO-15	NCK	61	PASI-M
10420077009	**SV102A-5'**	TO-15	NCK	61	PASI-M
10420077010	**DUP-1**	TO-15	MJL, NCK	61	PASI-M

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077001	**SV104A-5'**					
TO-15	Acetone	40.5	ug/m3	3.7	02/15/18 14:10	
TO-15	Benzene	1.3	ug/m3	0.050	02/15/18 14:10	
TO-15	Bromodichloromethane	0.10J	ug/m3	0.11	02/15/18 14:10	
TO-15	Carbon disulfide	17.6	ug/m3	0.98	02/15/18 14:10	
TO-15	Carbon tetrachloride	281	ug/m3	29.7	02/16/18 11:33	
TO-15	Chloroform	141	ug/m3	23.1	02/16/18 11:33	
TO-15	Cyclohexane	57.2	ug/m3	2.7	02/15/18 14:10	
TO-15	Dibromochloromethane	0.074J	ug/m3	2.7	02/15/18 14:10	
TO-15	Dichlorodifluoromethane	5.0	ug/m3	1.6	02/15/18 14:10	
TO-15	1,2-Dichloroethane	0.055J	ug/m3	0.064	02/15/18 14:10	
TO-15	1,1-Dichloroethene	0.040J	ug/m3	0.062	02/15/18 14:10	
TO-15	cis-1,2-Dichloroethene	0.030J	ug/m3	0.062	02/15/18 14:10	
TO-15	1,2-Dichloropropane	0.049J	ug/m3	0.073	02/15/18 14:10	
TO-15	cis-1,3-Dichloropropene	0.056J	ug/m3	0.071	02/15/18 14:10	
TO-15	trans-1,3-Dichloropropene	0.069J	ug/m3	0.071	02/15/18 14:10	
TO-15	Ethylbenzene	8.3	ug/m3	1.4	02/15/18 14:10	
TO-15	n-Heptane	2.7	ug/m3	1.3	02/15/18 14:10	
TO-15	n-Hexane	2.8	ug/m3	1.1	02/15/18 14:10	
TO-15	Isopropylbenzene (Cumene)	1.9J	ug/m3	3.9	02/15/18 14:10	
TO-15	Methylene Chloride	3.5J	ug/m3	5.5	02/15/18 14:10	
TO-15	2-Propanol	18.3	ug/m3	3.9	02/15/18 14:10	
TO-15	Propylene	25.7	ug/m3	0.54	02/15/18 14:10	
TO-15	Styrene	26.8	ug/m3	3.4	02/15/18 14:10	CH
TO-15	Tetrachloroethene	6.6	ug/m3	0.11	02/15/18 14:10	
TO-15	Toluene	146	ug/m3	1.2	02/15/18 14:10	
TO-15	1,1,1-Trichloroethane	0.042J	ug/m3	0.086	02/15/18 14:10	
TO-15	Trichloroethene	0.24	ug/m3	0.085	02/15/18 14:10	
TO-15	Trichlorofluoromethane	3.2	ug/m3	1.8	02/15/18 14:10	
TO-15	m&p-Xylene	35.7	ug/m3	6.8	02/15/18 14:10	
TO-15	o-Xylene	17.4	ug/m3	3.4	02/15/18 14:10	
10420077002	**SV104A-15'**					
TO-15	Benzene	1.8	ug/m3	0.048	02/15/18 14:45	
TO-15	Bromodichloromethane	0.10	ug/m3	0.10	02/15/18 14:45	
TO-15	2-Butanone (MEK)	2.4J	ug/m3	4.5	02/15/18 14:45	
TO-15	Carbon disulfide	46.7	ug/m3	0.94	02/15/18 14:45	
TO-15	Carbon tetrachloride	1850	ug/m3	28.6	02/16/18 12:05	
TO-15	Chloroform	996	ug/m3	22.2	02/16/18 12:05	
TO-15	Cyclohexane	13.0	ug/m3	2.6	02/15/18 14:45	
TO-15	Dibromochloromethane	0.080J	ug/m3	2.6	02/15/18 14:45	
TO-15	Dichlorodifluoromethane	2.9	ug/m3	1.5	02/15/18 14:45	
TO-15	1,1-Dichloroethane	0.040J	ug/m3	0.061	02/15/18 14:45	
TO-15	1,2-Dichloroethane	0.070	ug/m3	0.061	02/15/18 14:45	
TO-15	cis-1,2-Dichloroethene	0.032J	ug/m3	0.060	02/15/18 14:45	
TO-15	trans-1,2-Dichloroethene	0.063	ug/m3	0.060	02/15/18 14:45	
TO-15	cis-1,3-Dichloropropene	0.059J	ug/m3	0.069	02/15/18 14:45	
TO-15	Ethanol	5.0	ug/m3	1.4	02/15/18 14:45	CH,L1
TO-15	Ethylbenzene	11.4	ug/m3	1.3	02/15/18 14:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077002	**SV104A-15'**					
TO-15	n-Heptane	4.4	ug/m3	1.2	02/15/18 14:45	
TO-15	n-Hexane	4.5	ug/m3	1.1	02/15/18 14:45	
TO-15	Isopropylbenzene (Cumene)	2.2J	ug/m3	3.7	02/15/18 14:45	
TO-15	4-Methyl-2-pentanone (MIBK)	1.3J	ug/m3	7.8	02/15/18 14:45	
TO-15	Propylene	1850	ug/m3	15.6	02/16/18 12:05	
TO-15	Styrene	37.0	ug/m3	3.2	02/15/18 14:45	CH
TO-15	1,1,2,2-Tetrachloroethane	1.7	ug/m3	0.10	02/15/18 14:45	
TO-15	Tetrachloroethene	26.6	ug/m3	0.10	02/15/18 14:45	
TO-15	Toluene	184	ug/m3	1.1	02/15/18 14:45	
TO-15	1,1,1-Trichloroethane	0.066J	ug/m3	0.083	02/15/18 14:45	
TO-15	Trichloroethene	0.33	ug/m3	0.081	02/15/18 14:45	
TO-15	Trichlorofluoromethane	5.0	ug/m3	1.7	02/15/18 14:45	
TO-15	m&p-Xylene	50.3	ug/m3	6.6	02/15/18 14:45	
TO-15	o-Xylene	20.4	ug/m3	3.3	02/15/18 14:45	
10420077003	**SV104B-22'**					
TO-15	Acetone	36.5	ug/m3	4.0	02/15/18 15:19	
TO-15	Bromodichloromethane	0.18	ug/m3	0.11	02/15/18 15:19	
TO-15	2-Butanone (MEK)	3.4J	ug/m3	4.9	02/15/18 15:19	
TO-15	Carbon disulfide	42.5	ug/m3	1.0	02/15/18 15:19	
TO-15	Carbon tetrachloride	12100	ug/m3	83.8	02/16/18 12:37	
TO-15	Chloroform	840	ug/m3	65.1	02/16/18 12:37	A3
TO-15	Cyclohexane	4.7	ug/m3	2.9	02/15/18 15:19	
TO-15	Dibromochloromethane	0.058J	ug/m3	2.8	02/15/18 15:19	
TO-15	Dichlorodifluoromethane	7.0	ug/m3	1.7	02/15/18 15:19	
TO-15	1,1-Dichloroethane	0.11	ug/m3	0.067	02/15/18 15:19	
TO-15	1,2-Dichloroethane	0.097	ug/m3	0.067	02/15/18 15:19	
TO-15	1,1-Dichloroethene	0.071	ug/m3	0.066	02/15/18 15:19	
TO-15	cis-1,2-Dichloroethene	0.031J	ug/m3	0.066	02/15/18 15:19	
TO-15	cis-1,3-Dichloropropene	0.071J	ug/m3	0.076	02/15/18 15:19	
TO-15	Ethanol	9.2	ug/m3	1.6	02/15/18 15:19	CH,L1
TO-15	Ethylbenzene	7.6	ug/m3	1.4	02/15/18 15:19	
TO-15	n-Heptane	9.2	ug/m3	1.4	02/15/18 15:19	
TO-15	n-Hexane	9.1	ug/m3	1.2	02/15/18 15:19	
TO-15	Isopropylbenzene (Cumene)	0.61J	ug/m3	4.1	02/15/18 15:19	
TO-15	Methylene Chloride	3.8J	ug/m3	5.8	02/15/18 15:19	
TO-15	4-Methyl-2-pentanone (MIBK)	4.4J	ug/m3	8.5	02/15/18 15:19	
TO-15	Propylene	12.9	ug/m3	0.57	02/15/18 15:19	
TO-15	Styrene	12.7	ug/m3	3.6	02/15/18 15:19	CH
TO-15	Tetrachloroethene	57.6	ug/m3	0.11	02/15/18 15:19	
TO-15	Tetrahydrofuran	3.5	ug/m3	0.98	02/15/18 15:19	
TO-15	Toluene	160	ug/m3	1.3	02/15/18 15:19	
TO-15	1,1,1-Trichloroethane	0.18	ug/m3	0.091	02/15/18 15:19	
TO-15	Trichloroethene	0.26	ug/m3	0.090	02/15/18 15:19	
TO-15	Trichlorofluoromethane	55.0	ug/m3	1.9	02/15/18 15:19	
TO-15	m&p-Xylene	25.0	ug/m3	7.2	02/15/18 15:19	
TO-15	o-Xylene	9.6	ug/m3	3.6	02/15/18 15:19	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077004	**SV104B-27'**					
TO-15	Bromodichloromethane	0.16	ug/m3	0.11	02/15/18 15:54	
TO-15	2-Butanone (MEK)	4.6J	ug/m3	4.8	02/15/18 15:54	
TO-15	Carbon disulfide	46.4	ug/m3	1.0	02/15/18 15:54	
TO-15	Carbon tetrachloride	19700	ug/m3	82.3	02/16/18 13:44	
TO-15	Chloroform	1320	ug/m3	63.9	02/16/18 13:44	A3
TO-15	Dibromochloromethane	0.058J	ug/m3	2.8	02/15/18 15:54	
TO-15	Dichlorodifluoromethane	8.6	ug/m3	1.6	02/15/18 15:54	
TO-15	1,1-Dichloroethane	0.13	ug/m3	0.066	02/15/18 15:54	
TO-15	1,2-Dichloroethane	0.11	ug/m3	0.066	02/15/18 15:54	
TO-15	1,1-Dichloroethene	0.073	ug/m3	0.065	02/15/18 15:54	
TO-15	cis-1,2-Dichloroethene	0.041J	ug/m3	0.065	02/15/18 15:54	
TO-15	trans-1,2-Dichloroethene	0.10	ug/m3	0.065	02/15/18 15:54	
TO-15	cis-1,3-Dichloropropene	0.073J	ug/m3	0.074	02/15/18 15:54	
TO-15	trans-1,3-Dichloropropene	0.064J	ug/m3	0.074	02/15/18 15:54	
TO-15	Ethanol	6.7	ug/m3	1.5	02/15/18 15:54	CH,L1
TO-15	Ethylbenzene	7.7	ug/m3	1.4	02/15/18 15:54	
TO-15	4-Ethyltoluene	2.0	ug/m3	1.6	02/15/18 15:54	
TO-15	n-Heptane	10.5	ug/m3	1.3	02/15/18 15:54	
TO-15	n-Hexane	10.2	ug/m3	1.2	02/15/18 15:54	
TO-15	4-Methyl-2-pentanone (MIBK)	6.0J	ug/m3	8.4	02/15/18 15:54	
TO-15	Methyl-tert-butyl ether	2.7J	ug/m3	5.9	02/15/18 15:54	
TO-15	Styrene	12.1	ug/m3	3.5	02/15/18 15:54	CH
TO-15	1,1,2,2-Tetrachloroethane	1.5	ug/m3	0.11	02/15/18 15:54	
TO-15	Tetrachloroethene	53.1	ug/m3	0.11	02/15/18 15:54	
TO-15	Tetrahydrofuran	4.0	ug/m3	0.97	02/15/18 15:54	
TO-15	Toluene	156	ug/m3	1.2	02/15/18 15:54	
TO-15	1,1,1-Trichloroethane	0.27	ug/m3	0.089	02/15/18 15:54	
TO-15	Trichloroethene	0.30	ug/m3	0.088	02/15/18 15:54	
TO-15	Trichlorofluoromethane	78.5	ug/m3	1.8	02/15/18 15:54	
TO-15	m&p-Xylene	25.1	ug/m3	7.1	02/15/18 15:54	
TO-15	o-Xylene	8.8	ug/m3	3.6	02/15/18 15:54	
10420077005	**SV103A-5'**					
TO-15	Acetone	91.7	ug/m3	4.2	02/15/18 16:30	
TO-15	Bromodichloromethane	0.086J	ug/m3	0.12	02/15/18 16:30	
TO-15	2-Butanone (MEK)	2.6J	ug/m3	5.2	02/15/18 16:30	
TO-15	Carbon disulfide	17.6	ug/m3	1.1	02/15/18 16:30	
TO-15	Carbon tetrachloride	2160	ug/m3	3.0	02/17/18 01:39	
TO-15	Chloroform	2000	ug/m3	2.3	02/17/18 01:39	
TO-15	Dibromochloromethane	0.062J	ug/m3	3.0	02/15/18 16:30	
TO-15	Dichlorodifluoromethane	5.7	ug/m3	1.8	02/15/18 16:30	
TO-15	1,1-Dichloroethane	0.070J	ug/m3	0.072	02/15/18 16:30	
TO-15	1,2-Dichloroethane	0.11	ug/m3	0.072	02/15/18 16:30	
TO-15	1,1-Dichloroethene	0.46	ug/m3	0.071	02/15/18 16:30	
TO-15	cis-1,2-Dichloroethene	0.033J	ug/m3	0.071	02/15/18 16:30	
TO-15	trans-1,2-Dichloroethene	0.061J	ug/m3	0.071	02/15/18 16:30	
TO-15	1,2-Dichloropropane	0.075J	ug/m3	0.082	02/15/18 16:30	
TO-15	cis-1,3-Dichloropropene	0.054J	ug/m3	0.081	02/15/18 16:30	

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077005	**SV103A-5'**					
TO-15	Ethanol	22.6	ug/m3	1.7	02/15/18 16:30	CH,L1
TO-15	Ethylbenzene	2.4	ug/m3	1.5	02/15/18 16:30	
TO-15	n-Heptane	5.6	ug/m3	1.5	02/15/18 16:30	
TO-15	n-Hexane	20.7J	ug/m3	33.6	02/17/18 01:39	
TO-15	2-Propanol	8.6	ug/m3	4.4	02/15/18 16:30	
TO-15	Propylene	35.6	ug/m3	0.61	02/15/18 16:30	
TO-15	Styrene	7.8	ug/m3	3.8	02/15/18 16:30	CH
TO-15	1,1,2,2-Tetrachloroethane	0.76	ug/m3	0.12	02/15/18 16:30	
TO-15	Tetrachloroethene	29.3	ug/m3	0.12	02/15/18 16:30	
TO-15	Toluene	101	ug/m3	1.3	02/15/18 16:30	
TO-15	1,1,1-Trichloroethane	0.056J	ug/m3	0.097	02/15/18 16:30	
TO-15	Trichloroethene	0.17	ug/m3	0.096	02/15/18 16:30	
TO-15	Trichlorofluoromethane	12.8	ug/m3	2.0	02/15/18 16:30	
TO-15	Vinyl chloride	0.072	ug/m3	0.046	02/15/18 16:30	
TO-15	m&p-Xylene	11.2	ug/m3	7.7	02/15/18 16:30	
TO-15	o-Xylene	4.6	ug/m3	3.9	02/15/18 16:30	
10420077006	**SV102A-15'**					
TO-15	Acetone	26.9	ug/m3	4.0	02/15/18 17:05	
TO-15	Benzene	0.65	ug/m3	0.055	02/15/18 17:05	
TO-15	2-Butanone (MEK)	3.0J	ug/m3	5.0	02/15/18 17:05	
TO-15	Carbon disulfide	32.9	ug/m3	1.1	02/15/18 17:05	
TO-15	Carbon tetrachloride	3500	ug/m3	3.2	02/17/18 02:45	
TO-15	Chloroform	1500	ug/m3	2.5	02/17/18 02:45	
TO-15	Dibromochloromethane	0.057J	ug/m3	2.9	02/15/18 17:05	
TO-15	Dichlorodifluoromethane	6.2	ug/m3	1.7	02/15/18 17:05	
TO-15	1,1-Dichloroethane	0.056J	ug/m3	0.069	02/15/18 17:05	
TO-15	1,2-Dichloroethane	0.081	ug/m3	0.069	02/15/18 17:05	
TO-15	cis-1,2-Dichloroethene	0.032J	ug/m3	0.068	02/15/18 17:05	
TO-15	trans-1,2-Dichloroethene	0.074	ug/m3	0.068	02/15/18 17:05	
TO-15	cis-1,3-Dichloropropene	0.060J	ug/m3	0.077	02/15/18 17:05	
TO-15	trans-1,3-Dichloropropene	0.077J	ug/m3	0.077	02/15/18 17:05	
TO-15	Ethanol	2.6	ug/m3	1.6	02/15/18 17:05	CH,L1
TO-15	Ethylbenzene	12.1	ug/m3	1.5	02/15/18 17:05	
TO-15	n-Heptane	6.7	ug/m3	1.4	02/15/18 17:05	
TO-15	n-Hexane	4.1	ug/m3	1.2	02/15/18 17:05	
TO-15	Methylene Chloride	4.7J	ug/m3	5.9	02/15/18 17:05	
TO-15	Propylene	19.8	ug/m3	0.59	02/15/18 17:05	
TO-15	Styrene	15.1	ug/m3	3.6	02/15/18 17:05	CH
TO-15	1,1,2,2-Tetrachloroethane	1.8	ug/m3	0.12	02/15/18 17:05	
TO-15	Tetrachloroethene	73.6	ug/m3	0.12	02/15/18 17:05	
TO-15	Tetrahydrofuran	1.4	ug/m3	1.0	02/15/18 17:05	
TO-15	Toluene	872	ug/m3	38.6	02/17/18 02:45	
TO-15	1,1,1-Trichloroethane	0.093J	ug/m3	0.093	02/15/18 17:05	
TO-15	Trichloroethene	0.27	ug/m3	0.092	02/15/18 17:05	
TO-15	Trichlorofluoromethane	20.8	ug/m3	1.9	02/15/18 17:05	
TO-15	m&p-Xylene	55.4	ug/m3	7.4	02/15/18 17:05	
TO-15	o-Xylene	12.7	ug/m3	3.7	02/15/18 17:05	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077007	**SV101B-25'**					
TO-15	2-Butanone (MEK)	3.2J	ug/m3	5.0	02/15/18 17:40	
TO-15	Carbon disulfide	199	ug/m3	1.1	02/15/18 17:40	E
TO-15	Carbon tetrachloride	25700	ug/m3	8.6	02/17/18 03:51	
TO-15	Chloroform	4170	ug/m3	6.7	02/17/18 03:51	A3
TO-15	Cyclohexane	12.2	ug/m3	2.9	02/15/18 17:40	
TO-15	Dibromochloromethane	0.062J	ug/m3	2.9	02/15/18 17:40	
TO-15	Dichlorodifluoromethane	1.4J	ug/m3	1.7	02/15/18 17:40	
TO-15	1,1-Dichloroethane	0.087	ug/m3	0.069	02/15/18 17:40	
TO-15	1,2-Dichloroethane	0.11	ug/m3	0.069	02/15/18 17:40	
TO-15	1,1-Dichloroethene	0.36	ug/m3	0.068	02/15/18 17:40	
TO-15	cis-1,2-Dichloroethene	0.037J	ug/m3	0.068	02/15/18 17:40	
TO-15	1,2-Dichloropropane	0.070J	ug/m3	0.079	02/15/18 17:40	
TO-15	Ethanol	8.6	ug/m3	1.6	02/15/18 17:40	CH,L1
TO-15	Ethylbenzene	7.8	ug/m3	1.5	02/15/18 17:40	
TO-15	n-Heptane	6.0	ug/m3	1.4	02/15/18 17:40	
TO-15	n-Hexane	3.5	ug/m3	1.2	02/15/18 17:40	
TO-15	4-Methyl-2-pentanone (MIBK)	4.1J	ug/m3	8.7	02/15/18 17:40	
TO-15	Styrene	27.2	ug/m3	3.6	02/15/18 17:40	CH
TO-15	1,1,2,2-Tetrachloroethane	1.9	ug/m3	0.12	02/15/18 17:40	
TO-15	Tetrachloroethene	112	ug/m3	0.12	02/15/18 17:40	
TO-15	Toluene	182	ug/m3	1.3	02/15/18 17:40	
TO-15	1,1,1-Trichloroethane	0.12	ug/m3	0.093	02/15/18 17:40	
TO-15	Trichloroethene	0.21	ug/m3	0.092	02/15/18 17:40	
TO-15	m&p-Xylene	33.1	ug/m3	7.4	02/15/18 17:40	
TO-15	o-Xylene	14.6	ug/m3	3.7	02/15/18 17:40	
10420077008	**SV101A-5'**					
TO-15	Benzene	1.0	ug/m3	0.057	02/15/18 18:47	
TO-15	2-Butanone (MEK)	2.0J	ug/m3	5.2	02/15/18 18:47	
TO-15	Carbon disulfide	46.5	ug/m3	1.1	02/15/18 18:47	
TO-15	Carbon tetrachloride	8.7	ug/m3	0.11	02/15/18 18:47	
TO-15	Chloroform	3.4	ug/m3	0.087	02/15/18 18:47	C0,E
TO-15	Cyclohexane	31.1	ug/m3	3.1	02/15/18 18:47	
TO-15	Dibromochloromethane	0.092J	ug/m3	3.0	02/15/18 18:47	
TO-15	1,2-Dibromoethane (EDB)	0.071J	ug/m3	0.14	02/15/18 18:47	
TO-15	1,1-Dichloroethane	0.058J	ug/m3	0.072	02/15/18 18:47	
TO-15	1,2-Dichloroethane	0.079	ug/m3	0.072	02/15/18 18:47	
TO-15	cis-1,2-Dichloroethene	0.062J	ug/m3	0.071	02/15/18 18:47	
TO-15	1,2-Dichloropropane	0.074J	ug/m3	0.082	02/15/18 18:47	
TO-15	cis-1,3-Dichloropropene	0.077J	ug/m3	0.081	02/15/18 18:47	
TO-15	Ethanol	2.5	ug/m3	1.7	02/15/18 18:47	CH,L1
TO-15	Ethylbenzene	9.9	ug/m3	1.5	02/15/18 18:47	
TO-15	n-Heptane	3.5	ug/m3	1.5	02/15/18 18:47	
TO-15	n-Hexane	2.9	ug/m3	1.3	02/15/18 18:47	
TO-15	Methylene Chloride	6.8	ug/m3	6.2	02/15/18 18:47	
TO-15	Naphthalene	3.1J	ug/m3	4.7	02/15/18 18:47	
TO-15	Styrene	25.7	ug/m3	3.8	02/15/18 18:47	CH
TO-15	1,1,2,2-Tetrachloroethane	1.8	ug/m3	0.12	02/15/18 18:47	

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077008	**SV101A-5'**					
TO-15	Tetrachloroethene	54.6	ug/m3	0.12	02/15/18 18:47	
TO-15	Tetrahydrofuran	0.94J	ug/m3	1.0	02/15/18 18:47	
TO-15	Toluene	202	ug/m3	1.3	02/15/18 18:47	
TO-15	1,1,1-Trichloroethane	0.075J	ug/m3	0.097	02/15/18 18:47	
TO-15	Trichloroethene	0.30	ug/m3	0.096	02/15/18 18:47	
TO-15	Trichlorofluoromethane	2.1	ug/m3	2.0	02/15/18 18:47	
TO-15	1,1,2-Trichlorotrifluoroethane	0.82J	ug/m3	2.7	02/15/18 18:47	
TO-15	Vinyl chloride	0.16	ug/m3	0.046	02/15/18 18:47	
TO-15	m&p-Xylene	44.4	ug/m3	7.7	02/15/18 18:47	
TO-15	o-Xylene	14.9	ug/m3	3.9	02/15/18 18:47	
10420077009	**SV102A-5'**					
TO-15	Acetone	49.9	ug/m3	7.5	02/15/18 19:22	
TO-15	Benzene	1.3	ug/m3	0.10	02/15/18 19:22	
TO-15	Bromodichloromethane	0.097J	ug/m3	0.21	02/15/18 19:22	
TO-15	Carbon disulfide	41.4	ug/m3	2.0	02/15/18 19:22	
TO-15	Carbon tetrachloride	903	ug/m3	4.0	02/17/18 02:12	
TO-15	Chloroform	509	ug/m3	3.1	02/17/18 02:12	
TO-15	Cyclohexane	11.1	ug/m3	5.4	02/15/18 19:22	
TO-15	Dibromochloromethane	0.10J	ug/m3	5.4	02/15/18 19:22	
TO-15	Dichlorodifluoromethane	5.4	ug/m3	3.1	02/15/18 19:22	
TO-15	1,1-Dichloroethane	0.088J	ug/m3	0.13	02/15/18 19:22	
TO-15	1,2-Dichloroethane	0.099J	ug/m3	0.13	02/15/18 19:22	
TO-15	cis-1,2-Dichloroethene	0.052J	ug/m3	0.12	02/15/18 19:22	
TO-15	trans-1,2-Dichloroethene	0.10J	ug/m3	0.12	02/15/18 19:22	
TO-15	cis-1,3-Dichloropropene	0.091J	ug/m3	0.14	02/15/18 19:22	
TO-15	Ethanol	13.7	ug/m3	3.0	02/15/18 19:22	CH,L1
TO-15	Ethylbenzene	15.9	ug/m3	2.7	02/15/18 19:22	
TO-15	n-Heptane	5.9	ug/m3	2.6	02/15/18 19:22	
TO-15	n-Hexane	3.9	ug/m3	2.2	02/15/18 19:22	
TO-15	Methylene Chloride	15.6	ug/m3	10.9	02/15/18 19:22	
TO-15	Propylene	35.4	ug/m3	1.1	02/15/18 19:22	
TO-15	Styrene	17.3	ug/m3	6.7	02/15/18 19:22	CH
TO-15	1,1,2,2-Tetrachloroethane	2.0	ug/m3	0.22	02/15/18 19:22	
TO-15	Tetrachloroethene	73.8	ug/m3	0.21	02/15/18 19:22	
TO-15	Tetrahydrofuran	1.3J	ug/m3	1.9	02/15/18 19:22	
TO-15	Toluene	331	ug/m3	2.4	02/15/18 19:22	
TO-15	Trichloroethene	0.29	ug/m3	0.17	02/15/18 19:22	
TO-15	Trichlorofluoromethane	13.6	ug/m3	3.5	02/15/18 19:22	
TO-15	Vinyl acetate	3.3	ug/m3	2.2	02/15/18 19:22	
TO-15	m&p-Xylene	75.9	ug/m3	13.7	02/15/18 19:22	
TO-15	o-Xylene	16.7	ug/m3	6.8	02/15/18 19:22	
10420077010	**DUP-1**					
TO-15	Acetone	69.8	ug/m3	4.0	02/15/18 19:56	
TO-15	2-Butanone (MEK)	4.9J	ug/m3	5.0	02/15/18 19:56	
TO-15	Carbon disulfide	102	ug/m3	31.9	02/17/18 03:18	
TO-15	Carbon tetrachloride	28000	ug/m3	85.9	02/20/18 02:17	A3

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SUMMARY OF DETECTION

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420077010	**DUP-1**					
TO-15	Chloroform	2220	ug/m3	2.5	02/17/18 03:18	A3
TO-15	Dibromochloromethane	0.060J	ug/m3	2.9	02/15/18 19:56	
TO-15	Dichlorodifluoromethane	1.6J	ug/m3	1.7	02/15/18 19:56	
TO-15	1,1-Dichloroethane	0.077	ug/m3	0.069	02/15/18 19:56	
TO-15	1,2-Dichloroethane	0.11	ug/m3	0.069	02/15/18 19:56	
TO-15	Ethanol	13.7	ug/m3	1.6	02/15/18 19:56	CH,L1
TO-15	Ethylbenzene	7.9	ug/m3	1.5	02/15/18 19:56	
TO-15	n-Heptane	6.7	ug/m3	1.4	02/15/18 19:56	
TO-15	n-Hexane	4.0	ug/m3	1.2	02/15/18 19:56	
TO-15	Isopropylbenzene (Cumene)	1.3J	ug/m3	4.2	02/15/18 19:56	
TO-15	4-Methyl-2-pentanone (MIBK)	4.2J	ug/m3	8.7	02/15/18 19:56	
TO-15	Styrene	28.0	ug/m3	3.6	02/15/18 19:56	CH
TO-15	1,1,2,2-Tetrachloroethane	1.9	ug/m3	0.12	02/15/18 19:56	
TO-15	Tetrachloroethene	115	ug/m3	0.12	02/15/18 19:56	
TO-15	Tetrahydrofuran	2.9	ug/m3	1.0	02/15/18 19:56	
TO-15	Toluene	185	ug/m3	1.3	02/15/18 19:56	
TO-15	1,1,1-Trichloroethane	0.13	ug/m3	0.093	02/15/18 19:56	
TO-15	Trichloroethene	0.23	ug/m3	0.092	02/15/18 19:56	
TO-15	Trichlorofluoromethane	8.0	ug/m3	1.9	02/15/18 19:56	
TO-15	Vinyl chloride	0.072	ug/m3	0.044	02/15/18 19:56	
TO-15	m&p-Xylene	34.0	ug/m3	7.4	02/15/18 19:56	
TO-15	o-Xylene	14.3	ug/m3	3.7	02/15/18 19:56	

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PROJECT NARRATIVE

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: UPRR_CH2M Hill/Jacobs
Date: February 23, 2018

General Information:
10 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 523234

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- DUP-1 (Lab ID: 10420077010)
  - Ethanol
  - Styrene
- LCS (Lab ID: 2840491)
  - Ethanol
  - Styrene
- SV101A-5' (Lab ID: 10420077008)
  - Ethanol
  - Styrene
- SV101B-25' (Lab ID: 10420077007)
  - Ethanol
  - Styrene
- SV102A-15' (Lab ID: 10420077006)
  - Ethanol
  - Styrene
- SV102A-5' (Lab ID: 10420077009)
  - Ethanol
  - Styrene
- SV103A-5' (Lab ID: 10420077005)
  - Ethanol
  - Styrene
- SV104A-15' (Lab ID: 10420077002)
  - Ethanol
  - Styrene
- SV104A-5' (Lab ID: 10420077001)
  - Styrene
- SV104B-22' (Lab ID: 10420077003)
  - Ethanol
  - Styrene
- SV104B-27' (Lab ID: 10420077004)

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PROJECT NARRATIVE

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: UPRR_CH2M Hill/Jacobs
Date: February 23, 2018

QC Batch: 523234

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- Ethanol
- Styrene

CU: The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..
- LCS (Lab ID: 2840491)
    - Bromomethane
    - Chloroethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

QC Batch: 523234

IQ: The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.
- DUP-1 (Lab ID: 10420077010)
- SV101B-25' (Lab ID: 10420077007)
- SV104A-5' (Lab ID: 10420077001)
- SV104B-27' (Lab ID: 10420077004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 523234

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- LCS (Lab ID: 2840491)
    - Ethanol

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
- LCS (Lab ID: 2840491)
    - Bromomethane

Additional Comments:

Analyte Comments:

QC Batch: 523234

A3: The sample was analyzed by serial dilution.
- DUP-1 (Lab ID: 10420077010)
    - Carbon tetrachloride
    - Chloroform

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PROJECT NARRATIVE

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: UPRR_CH2M Hill/Jacobs
Date: February 23, 2018

Analyte Comments:

QC Batch: 523234

A3: The sample was analyzed by serial dilution.

- SV101B-25' (Lab ID: 10420077007)
  - Chloroform
- SV104B-22' (Lab ID: 10420077003)
  - Chloroform
- SV104B-27' (Lab ID: 10420077004)
  - Chloroform

C0: Result confirmed by second analysis.

- SV101A-5' (Lab ID: 10420077008)
  - Chloroform

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- SV101A-5' (Lab ID: 10420077008)
  - Chloroform
- SV101B-25' (Lab ID: 10420077007)
  - Carbon disulfide

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104A-5' **Lab ID: 10420077001** Collected: 02/07/18 09:10 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**40.5**	ug/m3	3.7	2.3	1.55		02/15/18 14:10	67-64-1	
Benzene	**1.3**	ug/m3	0.050	0.025	1.55		02/15/18 14:10	71-43-2	
Bromodichloromethane	**0.10J**	ug/m3	0.11	0.044	1.55		02/15/18 14:10	75-27-4	
Bromoform	**<1.1**	ug/m3	8.1	1.1	1.55		02/15/18 14:10	75-25-2	
Bromomethane	**<0.32**	ug/m3	3.1	0.32	1.55		02/15/18 14:10	74-83-9	
1,3-Butadiene	**<0.033**	ug/m3	0.035	0.033	1.55		02/15/18 14:10	106-99-0	
2-Butanone (MEK)	**<0.31**	ug/m3	4.6	0.31	1.55		02/15/18 14:10	78-93-3	
Carbon disulfide	**17.6**	ug/m3	0.98	0.28	1.55		02/15/18 14:10	75-15-0	
Carbon tetrachloride	**281**	ug/m3	29.7	14.8	46.5		02/16/18 11:33	56-23-5	
Chlorobenzene	**<0.28**	ug/m3	1.5	0.28	1.55		02/15/18 14:10	108-90-7	
Chloroethane	**<0.32**	ug/m3	2.1	0.32	1.55		02/15/18 14:10	75-00-3	
Chloroform	**141**	ug/m3	23.1	10.7	46.5		02/16/18 11:33	67-66-3	
Chloromethane	**<0.21**	ug/m3	0.65	0.21	1.55		02/15/18 14:10	74-87-3	
Cyclohexane	**57.2**	ug/m3	2.7	0.35	1.55		02/15/18 14:10	110-82-7	
Dibromochloromethane	**0.074J**	ug/m3	2.7	0.047	1.55		02/15/18 14:10	124-48-1	
1,2-Dibromoethane (EDB)	**<0.058**	ug/m3	0.12	0.058	1.55		02/15/18 14:10	106-93-4	
1,2-Dichlorobenzene	**<0.51**	ug/m3	1.9	0.51	1.55		02/15/18 14:10	95-50-1	
1,3-Dichlorobenzene	**<0.72**	ug/m3	1.9	0.72	1.55		02/15/18 14:10	541-73-1	
1,4-Dichlorobenzene	**<0.34**	ug/m3	1.9	0.34	1.55		02/15/18 14:10	106-46-7	
Dichlorodifluoromethane	**5.0**	ug/m3	1.6	0.64	1.55		02/15/18 14:10	75-71-8	
1,1-Dichloroethane	**<0.023**	ug/m3	0.064	0.023	1.55		02/15/18 14:10	75-34-3	
1,2-Dichloroethane	**0.055J**	ug/m3	0.064	0.047	1.55		02/15/18 14:10	107-06-2	
1,1-Dichloroethene	**0.040J**	ug/m3	0.062	0.031	1.55		02/15/18 14:10	75-35-4	
cis-1,2-Dichloroethene	**0.030J**	ug/m3	0.062	0.022	1.55		02/15/18 14:10	156-59-2	
trans-1,2-Dichloroethene	**<0.033**	ug/m3	0.062	0.033	1.55		02/15/18 14:10	156-60-5	
1,2-Dichloropropane	**0.049J**	ug/m3	0.073	0.019	1.55		02/15/18 14:10	78-87-5	
cis-1,3-Dichloropropene	**0.056J**	ug/m3	0.071	0.042	1.55		02/15/18 14:10	10061-01-5	
trans-1,3-Dichloropropene	**0.069J**	ug/m3	0.071	0.044	1.55		02/15/18 14:10	10061-02-6	
Dichlorotetrafluoroethane	**<0.69**	ug/m3	2.2	0.69	1.55		02/15/18 14:10	76-14-2	
Ethanol	**<0.72**	ug/m3	1.5	0.72	1.55		02/15/18 14:10	64-17-5	
Ethyl acetate	**<0.30**	ug/m3	1.1	0.30	1.55		02/15/18 14:10	141-78-6	
Ethylbenzene	**8.3**	ug/m3	1.4	0.27	1.55		02/15/18 14:10	100-41-4	
4-Ethyltoluene	**<0.33**	ug/m3	1.5	0.33	1.55		02/15/18 14:10	622-96-8	
n-Heptane	**2.7**	ug/m3	1.3	0.33	1.55		02/15/18 14:10	142-82-5	
Hexachloro-1,3-butadiene	**<1.3**	ug/m3	3.4	1.3	1.55		02/15/18 14:10	87-68-3	
n-Hexane	**2.8**	ug/m3	1.1	0.52	1.55		02/15/18 14:10	110-54-3	
2-Hexanone	**<0.95**	ug/m3	8.1	0.95	1.55		02/15/18 14:10	591-78-6	
Isopropylbenzene (Cumene)	**1.9J**	ug/m3	3.9	0.51	1.55		02/15/18 14:10	98-82-8	
Methylene Chloride	**3.5J**	ug/m3	5.5	2.4	1.55		02/15/18 14:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/m3	8.1	0.55	1.55		02/15/18 14:10	108-10-1	
Methyl-tert-butyl ether	**<1.0**	ug/m3	5.7	1.0	1.55		02/15/18 14:10	1634-04-4	
Naphthalene	**<0.93**	ug/m3	4.1	0.93	1.55		02/15/18 14:10	91-20-3	
2-Propanol	**18.3**	ug/m3	3.9	1.9	1.55		02/15/18 14:10	67-63-0	
Propylene	**25.7**	ug/m3	0.54	0.24	1.55		02/15/18 14:10	115-07-1	
Styrene	**26.8**	ug/m3	3.4	0.26	1.55		02/15/18 14:10	100-42-5	CH
1,1,2,2-Tetrachloroethane	**<0.060**	ug/m3	0.11	0.060	1.55		02/15/18 14:10	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104A-5' **Lab ID: 10420077001** Collected: 02/07/18 09:10 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**6.6**	ug/m3	0.11	0.047	1.55		02/15/18 14:10	127-18-4	
Tetrahydrofuran	**<0.42**	ug/m3	0.93	0.42	1.55		02/15/18 14:10	109-99-9	
Toluene	**146**	ug/m3	1.2	0.25	1.55		02/15/18 14:10	108-88-3	
1,2,4-Trichlorobenzene	**<1.5**	ug/m3	5.8	1.5	1.55		02/15/18 14:10	120-82-1	
1,1,1-Trichloroethane	**0.042J**	ug/m3	0.086	0.038	1.55		02/15/18 14:10	71-55-6	
1,1,2-Trichloroethane	**<0.041**	ug/m3	0.086	0.041	1.55		02/15/18 14:10	79-00-5	
Trichloroethene	**0.24**	ug/m3	0.085	0.048	1.55		02/15/18 14:10	79-01-6	
Trichlorofluoromethane	**3.2**	ug/m3	1.8	0.65	1.55		02/15/18 14:10	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.57**	ug/m3	2.4	0.57	1.55		02/15/18 14:10	76-13-1	
1,2,4-Trimethylbenzene	**<0.27**	ug/m3	3.9	0.27	1.55		02/15/18 14:10	95-63-6	
1,3,5-Trimethylbenzene	**<0.64**	ug/m3	3.9	0.64	1.55		02/15/18 14:10	108-67-8	
Vinyl acetate	**<0.26**	ug/m3	1.1	0.26	1.55		02/15/18 14:10	108-05-4	
Vinyl chloride	**<0.040**	ug/m3	0.040	0.040	1.55		02/15/18 14:10	75-01-4	
m&p-Xylene	**35.7**	ug/m3	6.8	0.54	1.55		02/15/18 14:10	179601-23-1	
o-Xylene	**17.4**	ug/m3	3.4	0.58	1.55		02/15/18 14:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104A-15' **Lab ID: 10420077002** Collected: 02/07/18 09:09 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**<2.2**	ug/m3	3.6	2.2	1.49		02/15/18 14:45	67-64-1	
Benzene	**1.8**	ug/m3	0.048	0.024	1.49		02/15/18 14:45	71-43-2	
Bromodichloromethane	**0.10**	ug/m3	0.10	0.042	1.49		02/15/18 14:45	75-27-4	
Bromoform	**<1.0**	ug/m3	7.8	1.0	1.49		02/15/18 14:45	75-25-2	
Bromomethane	**<0.31**	ug/m3	2.9	0.31	1.49		02/15/18 14:45	74-83-9	
1,3-Butadiene	**<0.032**	ug/m3	0.034	0.032	1.49		02/15/18 14:45	106-99-0	
2-Butanone (MEK)	**2.4J**	ug/m3	4.5	0.30	1.49		02/15/18 14:45	78-93-3	
Carbon disulfide	**46.7**	ug/m3	0.94	0.27	1.49		02/15/18 14:45	75-15-0	
Carbon tetrachloride	**1850**	ug/m3	28.6	14.2	44.7		02/16/18 12:05	56-23-5	
Chlorobenzene	**<0.27**	ug/m3	1.4	0.27	1.49		02/15/18 14:45	108-90-7	
Chloroethane	**<0.30**	ug/m3	2.0	0.30	1.49		02/15/18 14:45	75-00-3	
Chloroform	**996**	ug/m3	22.2	10.3	44.7		02/16/18 12:05	67-66-3	
Chloromethane	**<0.20**	ug/m3	0.63	0.20	1.49		02/15/18 14:45	74-87-3	
Cyclohexane	**13.0**	ug/m3	2.6	0.34	1.49		02/15/18 14:45	110-82-7	
Dibromochloromethane	**0.080J**	ug/m3	2.6	0.045	1.49		02/15/18 14:45	124-48-1	
1,2-Dibromoethane (EDB)	**<0.056**	ug/m3	0.12	0.056	1.49		02/15/18 14:45	106-93-4	
1,2-Dichlorobenzene	**<0.49**	ug/m3	1.8	0.49	1.49		02/15/18 14:45	95-50-1	
1,3-Dichlorobenzene	**<0.69**	ug/m3	1.8	0.69	1.49		02/15/18 14:45	541-73-1	
1,4-Dichlorobenzene	**<0.33**	ug/m3	1.8	0.33	1.49		02/15/18 14:45	106-46-7	
Dichlorodifluoromethane	**2.9**	ug/m3	1.5	0.62	1.49		02/15/18 14:45	75-71-8	
1,1-Dichloroethane	**0.040J**	ug/m3	0.061	0.022	1.49		02/15/18 14:45	75-34-3	
1,2-Dichloroethane	**0.070**	ug/m3	0.061	0.045	1.49		02/15/18 14:45	107-06-2	
1,1-Dichloroethene	**<0.030**	ug/m3	0.060	0.030	1.49		02/15/18 14:45	75-35-4	
cis-1,2-Dichloroethene	**0.032J**	ug/m3	0.060	0.021	1.49		02/15/18 14:45	156-59-2	
trans-1,2-Dichloroethene	**0.063**	ug/m3	0.060	0.031	1.49		02/15/18 14:45	156-60-5	
1,2-Dichloropropane	**<0.018**	ug/m3	0.070	0.018	1.49		02/15/18 14:45	78-87-5	
cis-1,3-Dichloropropene	**0.059J**	ug/m3	0.069	0.040	1.49		02/15/18 14:45	10061-01-5	
trans-1,3-Dichloropropene	**<0.042**	ug/m3	0.069	0.042	1.49		02/15/18 14:45	10061-02-6	
Dichlorotetrafluoroethane	**<0.66**	ug/m3	2.1	0.66	1.49		02/15/18 14:45	76-14-2	
Ethanol	**5.0**	ug/m3	1.4	0.69	1.49		02/15/18 14:45	64-17-5	CH,L1
Ethyl acetate	**<0.29**	ug/m3	1.1	0.29	1.49		02/15/18 14:45	141-78-6	
Ethylbenzene	**11.4**	ug/m3	1.3	0.25	1.49		02/15/18 14:45	100-41-4	
4-Ethyltoluene	**<0.32**	ug/m3	1.5	0.32	1.49		02/15/18 14:45	622-96-8	
n-Heptane	**4.4**	ug/m3	1.2	0.31	1.49		02/15/18 14:45	142-82-5	
Hexachloro-1,3-butadiene	**<1.3**	ug/m3	3.2	1.3	1.49		02/15/18 14:45	87-68-3	
n-Hexane	**4.5**	ug/m3	1.1	0.50	1.49		02/15/18 14:45	110-54-3	
2-Hexanone	**<0.91**	ug/m3	7.8	0.91	1.49		02/15/18 14:45	591-78-6	
Isopropylbenzene (Cumene)	**2.2J**	ug/m3	3.7	0.49	1.49		02/15/18 14:45	98-82-8	
Methylene Chloride	**<2.3**	ug/m3	5.3	2.3	1.49		02/15/18 14:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.3J**	ug/m3	7.8	0.53	1.49		02/15/18 14:45	108-10-1	
Methyl-tert-butyl ether	**<0.99**	ug/m3	5.5	0.99	1.49		02/15/18 14:45	1634-04-4	
Naphthalene	**<0.89**	ug/m3	4.0	0.89	1.49		02/15/18 14:45	91-20-3	
2-Propanol	**<1.9**	ug/m3	3.7	1.9	1.49		02/15/18 14:45	67-63-0	
Propylene	**1850**	ug/m3	15.6	7.0	44.7		02/16/18 12:05	115-07-1	
Styrene	**37.0**	ug/m3	3.2	0.25	1.49		02/15/18 14:45	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.7**	ug/m3	0.10	0.057	1.49		02/15/18 14:45	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104A-15' **Lab ID: 10420077002** Collected: 02/07/18 09:09 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**26.6**	ug/m3	0.10	0.045	1.49		02/15/18 14:45	127-18-4	
Tetrahydrofuran	**<0.41**	ug/m3	0.89	0.41	1.49		02/15/18 14:45	109-99-9	
Toluene	**184**	ug/m3	1.1	0.24	1.49		02/15/18 14:45	108-88-3	
1,2,4-Trichlorobenzene	**<1.4**	ug/m3	5.6	1.4	1.49		02/15/18 14:45	120-82-1	
1,1,1-Trichloroethane	**0.066J**	ug/m3	0.083	0.037	1.49		02/15/18 14:45	71-55-6	
1,1,2-Trichloroethane	**<0.040**	ug/m3	0.083	0.040	1.49		02/15/18 14:45	79-00-5	
Trichloroethene	**0.33**	ug/m3	0.081	0.046	1.49		02/15/18 14:45	79-01-6	
Trichlorofluoromethane	**5.0**	ug/m3	1.7	0.62	1.49		02/15/18 14:45	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.55**	ug/m3	2.3	0.55	1.49		02/15/18 14:45	76-13-1	
1,2,4-Trimethylbenzene	**<0.26**	ug/m3	3.7	0.26	1.49		02/15/18 14:45	95-63-6	
1,3,5-Trimethylbenzene	**<0.61**	ug/m3	3.7	0.61	1.49		02/15/18 14:45	108-67-8	
Vinyl acetate	**<0.25**	ug/m3	1.1	0.25	1.49		02/15/18 14:45	108-05-4	
Vinyl chloride	**<0.038**	ug/m3	0.039	0.038	1.49		02/15/18 14:45	75-01-4	
m&p-Xylene	**50.3**	ug/m3	6.6	0.52	1.49		02/15/18 14:45	179601-23-1	
o-Xylene	**20.4**	ug/m3	3.3	0.55	1.49		02/15/18 14:45	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104B-22' **Lab ID: 10420077003** Collected: 02/07/18 09:11 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**36.5**	ug/m3	4.0	2.5	1.64		02/15/18 15:19	67-64-1	
Benzene	**<0.026**	ug/m3	0.053	0.026	1.64		02/15/18 15:19	71-43-2	
Bromodichloromethane	**0.18**	ug/m3	0.11	0.046	1.64		02/15/18 15:19	75-27-4	
Bromoform	**<1.1**	ug/m3	8.6	1.1	1.64		02/15/18 15:19	75-25-2	
Bromomethane	**<0.34**	ug/m3	3.2	0.34	1.64		02/15/18 15:19	74-83-9	
1,3-Butadiene	**<0.035**	ug/m3	0.037	0.035	1.64		02/15/18 15:19	106-99-0	
2-Butanone (MEK)	**3.4J**	ug/m3	4.9	0.33	1.64		02/15/18 15:19	78-93-3	
Carbon disulfide	**42.5**	ug/m3	1.0	0.29	1.64		02/15/18 15:19	75-15-0	
Carbon tetrachloride	**12100**	ug/m3	83.8	41.7	131.2		02/16/18 12:37	56-23-5	
Chlorobenzene	**<0.29**	ug/m3	1.5	0.29	1.64		02/15/18 15:19	108-90-7	
Chloroethane	**<0.33**	ug/m3	2.2	0.33	1.64		02/15/18 15:19	75-00-3	
Chloroform	**840**	ug/m3	65.1	30.3	131.2		02/16/18 12:37	67-66-3	A3
Chloromethane	**<0.22**	ug/m3	0.69	0.22	1.64		02/15/18 15:19	74-87-3	
Cyclohexane	**4.7**	ug/m3	2.9	0.37	1.64		02/15/18 15:19	110-82-7	
Dibromochloromethane	**0.058J**	ug/m3	2.8	0.050	1.64		02/15/18 15:19	124-48-1	
1,2-Dibromoethane (EDB)	**<0.062**	ug/m3	0.13	0.062	1.64		02/15/18 15:19	106-93-4	
1,2-Dichlorobenzene	**<0.53**	ug/m3	2.0	0.53	1.64		02/15/18 15:19	95-50-1	
1,3-Dichlorobenzene	**<0.76**	ug/m3	2.0	0.76	1.64		02/15/18 15:19	541-73-1	
1,4-Dichlorobenzene	**<0.36**	ug/m3	2.0	0.36	1.64		02/15/18 15:19	106-46-7	
Dichlorodifluoromethane	**7.0**	ug/m3	1.7	0.68	1.64		02/15/18 15:19	75-71-8	
1,1-Dichloroethane	**0.11**	ug/m3	0.067	0.024	1.64		02/15/18 15:19	75-34-3	
1,2-Dichloroethane	**0.097**	ug/m3	0.067	0.049	1.64		02/15/18 15:19	107-06-2	
1,1-Dichloroethene	**0.071**	ug/m3	0.066	0.033	1.64		02/15/18 15:19	75-35-4	
cis-1,2-Dichloroethene	**0.031J**	ug/m3	0.066	0.023	1.64		02/15/18 15:19	156-59-2	
trans-1,2-Dichloroethene	**<0.034**	ug/m3	0.066	0.034	1.64		02/15/18 15:19	156-60-5	
1,2-Dichloropropane	**<0.020**	ug/m3	0.077	0.020	1.64		02/15/18 15:19	78-87-5	
cis-1,3-Dichloropropene	**0.071J**	ug/m3	0.076	0.044	1.64		02/15/18 15:19	10061-01-5	
trans-1,3-Dichloropropene	**<0.046**	ug/m3	0.076	0.046	1.64		02/15/18 15:19	10061-02-6	
Dichlorotetrafluoroethane	**<0.72**	ug/m3	2.3	0.72	1.64		02/15/18 15:19	76-14-2	
Ethanol	**9.2**	ug/m3	1.6	0.76	1.64		02/15/18 15:19	64-17-5	CH,L1
Ethyl acetate	**<0.32**	ug/m3	1.2	0.32	1.64		02/15/18 15:19	141-78-6	
Ethylbenzene	**7.6**	ug/m3	1.4	0.28	1.64		02/15/18 15:19	100-41-4	
4-Ethyltoluene	**<0.35**	ug/m3	1.6	0.35	1.64		02/15/18 15:19	622-96-8	
n-Heptane	**9.2**	ug/m3	1.4	0.34	1.64		02/15/18 15:19	142-82-5	
Hexachloro-1,3-butadiene	**<1.4**	ug/m3	3.6	1.4	1.64		02/15/18 15:19	87-68-3	
n-Hexane	**9.1**	ug/m3	1.2	0.55	1.64		02/15/18 15:19	110-54-3	
2-Hexanone	**<1.0**	ug/m3	8.5	1.0	1.64		02/15/18 15:19	591-78-6	
Isopropylbenzene (Cumene)	**0.61J**	ug/m3	4.1	0.54	1.64		02/15/18 15:19	98-82-8	
Methylene Chloride	**3.8J**	ug/m3	5.8	2.5	1.64		02/15/18 15:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	**4.4J**	ug/m3	8.5	0.58	1.64		02/15/18 15:19	108-10-1	
Methyl-tert-butyl ether	**<1.1**	ug/m3	6.0	1.1	1.64		02/15/18 15:19	1634-04-4	
Naphthalene	**<0.98**	ug/m3	4.4	0.98	1.64		02/15/18 15:19	91-20-3	
2-Propanol	**<2.0**	ug/m3	4.1	2.0	1.64		02/15/18 15:19	67-63-0	
Propylene	**12.9**	ug/m3	0.57	0.26	1.64		02/15/18 15:19	115-07-1	
Styrene	**12.7**	ug/m3	3.6	0.27	1.64		02/15/18 15:19	100-42-5	CH
1,1,2,2-Tetrachloroethane	**<0.063**	ug/m3	0.11	0.063	1.64		02/15/18 15:19	79-34-5	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104B-22' **Lab ID: 10420077003** Collected: 02/07/18 09:11 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**57.6**	ug/m3	0.11	0.050	1.64		02/15/18 15:19	127-18-4	
Tetrahydrofuran	**3.5**	ug/m3	0.98	0.45	1.64		02/15/18 15:19	109-99-9	
Toluene	**160**	ug/m3	1.3	0.26	1.64		02/15/18 15:19	108-88-3	
1,2,4-Trichlorobenzene	**<1.6**	ug/m3	6.2	1.6	1.64		02/15/18 15:19	120-82-1	
1,1,1-Trichloroethane	**0.18**	ug/m3	0.091	0.041	1.64		02/15/18 15:19	71-55-6	
1,1,2-Trichloroethane	**<0.044**	ug/m3	0.091	0.044	1.64		02/15/18 15:19	79-00-5	
Trichloroethene	**0.26**	ug/m3	0.090	0.051	1.64		02/15/18 15:19	79-01-6	
Trichlorofluoromethane	**55.0**	ug/m3	1.9	0.69	1.64		02/15/18 15:19	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.61**	ug/m3	2.6	0.61	1.64		02/15/18 15:19	76-13-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/m3	4.1	0.28	1.64		02/15/18 15:19	95-63-6	
1,3,5-Trimethylbenzene	**<0.68**	ug/m3	4.1	0.68	1.64		02/15/18 15:19	108-67-8	
Vinyl acetate	**<0.27**	ug/m3	1.2	0.27	1.64		02/15/18 15:19	108-05-4	
Vinyl chloride	**<0.042**	ug/m3	0.043	0.042	1.64		02/15/18 15:19	75-01-4	
m&p-Xylene	**25.0**	ug/m3	7.2	0.57	1.64		02/15/18 15:19	179601-23-1	
o-Xylene	**9.6**	ug/m3	3.6	0.61	1.64		02/15/18 15:19	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104B-27' **Lab ID: 10420077004** Collected: 02/07/18 09:11 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**<2.4**	ug/m3	3.9	2.4	1.61		02/15/18 15:54	67-64-1	
Benzene	**<0.026**	ug/m3	0.052	0.026	1.61		02/15/18 15:54	71-43-2	
Bromodichloromethane	**0.16**	ug/m3	0.11	0.045	1.61		02/15/18 15:54	75-27-4	
Bromoform	**<1.1**	ug/m3	8.5	1.1	1.61		02/15/18 15:54	75-25-2	
Bromomethane	**<0.33**	ug/m3	3.2	0.33	1.61		02/15/18 15:54	74-83-9	
1,3-Butadiene	**<0.035**	ug/m3	0.036	0.035	1.61		02/15/18 15:54	106-99-0	
2-Butanone (MEK)	**4.6J**	ug/m3	4.8	0.33	1.61		02/15/18 15:54	78-93-3	
Carbon disulfide	**46.4**	ug/m3	1.0	0.29	1.61		02/15/18 15:54	75-15-0	
Carbon tetrachloride	**19700**	ug/m3	82.3	41.0	128.8		02/16/18 13:44	56-23-5	
Chlorobenzene	**<0.29**	ug/m3	1.5	0.29	1.61		02/15/18 15:54	108-90-7	
Chloroethane	**<0.33**	ug/m3	2.2	0.33	1.61		02/15/18 15:54	75-00-3	
Chloroform	**1320**	ug/m3	63.9	29.8	128.8		02/16/18 13:44	67-66-3	A3
Chloromethane	**<0.22**	ug/m3	0.68	0.22	1.61		02/15/18 15:54	74-87-3	
Cyclohexane	**<0.37**	ug/m3	2.8	0.37	1.61		02/15/18 15:54	110-82-7	
Dibromochloromethane	**0.058J**	ug/m3	2.8	0.049	1.61		02/15/18 15:54	124-48-1	
1,2-Dibromoethane (EDB)	**<0.061**	ug/m3	0.13	0.061	1.61		02/15/18 15:54	106-93-4	
1,2-Dichlorobenzene	**<0.52**	ug/m3	2.0	0.52	1.61		02/15/18 15:54	95-50-1	
1,3-Dichlorobenzene	**<0.75**	ug/m3	2.0	0.75	1.61		02/15/18 15:54	541-73-1	
1,4-Dichlorobenzene	**<0.35**	ug/m3	2.0	0.35	1.61		02/15/18 15:54	106-46-7	
Dichlorodifluoromethane	**8.6**	ug/m3	1.6	0.67	1.61		02/15/18 15:54	75-71-8	
1,1-Dichloroethane	**0.13**	ug/m3	0.066	0.024	1.61		02/15/18 15:54	75-34-3	
1,2-Dichloroethane	**0.11**	ug/m3	0.066	0.048	1.61		02/15/18 15:54	107-06-2	
1,1-Dichloroethene	**0.073**	ug/m3	0.065	0.033	1.61		02/15/18 15:54	75-35-4	
cis-1,2-Dichloroethene	**0.041J**	ug/m3	0.065	0.023	1.61		02/15/18 15:54	156-59-2	
trans-1,2-Dichloroethene	**0.10**	ug/m3	0.065	0.034	1.61		02/15/18 15:54	156-60-5	
1,2-Dichloropropane	**<0.020**	ug/m3	0.076	0.020	1.61		02/15/18 15:54	78-87-5	
cis-1,3-Dichloropropene	**0.073J**	ug/m3	0.074	0.044	1.61		02/15/18 15:54	10061-01-5	
trans-1,3-Dichloropropene	**0.064J**	ug/m3	0.074	0.045	1.61		02/15/18 15:54	10061-02-6	
Dichlorotetrafluoroethane	**<0.71**	ug/m3	2.3	0.71	1.61		02/15/18 15:54	76-14-2	
Ethanol	**6.7**	ug/m3	1.5	0.75	1.61		02/15/18 15:54	64-17-5	CH,L1
Ethyl acetate	**<0.32**	ug/m3	1.2	0.32	1.61		02/15/18 15:54	141-78-6	
Ethylbenzene	**7.7**	ug/m3	1.4	0.28	1.61		02/15/18 15:54	100-41-4	
4-Ethyltoluene	**2.0**	ug/m3	1.6	0.34	1.61		02/15/18 15:54	622-96-8	
n-Heptane	**10.5**	ug/m3	1.3	0.34	1.61		02/15/18 15:54	142-82-5	
Hexachloro-1,3-butadiene	**<1.4**	ug/m3	3.5	1.4	1.61		02/15/18 15:54	87-68-3	
n-Hexane	**10.2**	ug/m3	1.2	0.54	1.61		02/15/18 15:54	110-54-3	
2-Hexanone	**<0.99**	ug/m3	8.4	0.99	1.61		02/15/18 15:54	591-78-6	
Isopropylbenzene (Cumene)	**<0.53**	ug/m3	4.0	0.53	1.61		02/15/18 15:54	98-82-8	
Methylene Chloride	**<2.4**	ug/m3	5.7	2.4	1.61		02/15/18 15:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	**6.0J**	ug/m3	8.4	0.57	1.61		02/15/18 15:54	108-10-1	
Methyl-tert-butyl ether	**2.7J**	ug/m3	5.9	1.1	1.61		02/15/18 15:54	1634-04-4	
Naphthalene	**<0.96**	ug/m3	4.3	0.96	1.61		02/15/18 15:54	91-20-3	
2-Propanol	**<2.0**	ug/m3	4.0	2.0	1.61		02/15/18 15:54	67-63-0	
Propylene	**<0.25**	ug/m3	0.56	0.25	1.61		02/15/18 15:54	115-07-1	
Styrene	**12.1**	ug/m3	3.5	0.27	1.61		02/15/18 15:54	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.5**	ug/m3	0.11	0.062	1.61		02/15/18 15:54	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV104B-27' **Lab ID: 10420077004** Collected: 02/07/18 09:11 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**53.1**	ug/m3	0.11	0.049	1.61		02/15/18 15:54	127-18-4	
Tetrahydrofuran	**4.0**	ug/m3	0.97	0.44	1.61		02/15/18 15:54	109-99-9	
Toluene	**156**	ug/m3	1.2	0.26	1.61		02/15/18 15:54	108-88-3	
1,2,4-Trichlorobenzene	**<1.5**	ug/m3	6.1	1.5	1.61		02/15/18 15:54	120-82-1	
1,1,1-Trichloroethane	**0.27**	ug/m3	0.089	0.040	1.61		02/15/18 15:54	71-55-6	
1,1,2-Trichloroethane	**<0.043**	ug/m3	0.089	0.043	1.61		02/15/18 15:54	79-00-5	
Trichloroethene	**0.30**	ug/m3	0.088	0.050	1.61		02/15/18 15:54	79-01-6	
Trichlorofluoromethane	**78.5**	ug/m3	1.8	0.67	1.61		02/15/18 15:54	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.59**	ug/m3	2.5	0.59	1.61		02/15/18 15:54	76-13-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/m3	4.0	0.28	1.61		02/15/18 15:54	95-63-6	
1,3,5-Trimethylbenzene	**<0.66**	ug/m3	4.0	0.66	1.61		02/15/18 15:54	108-67-8	
Vinyl acetate	**<0.27**	ug/m3	1.2	0.27	1.61		02/15/18 15:54	108-05-4	
Vinyl chloride	**<0.041**	ug/m3	0.042	0.041	1.61		02/15/18 15:54	75-01-4	
m&p-Xylene	**25.1**	ug/m3	7.1	0.56	1.61		02/15/18 15:54	179601-23-1	
o-Xylene	**8.8**	ug/m3	3.6	0.60	1.61		02/15/18 15:54	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV103A-5' **Lab ID: 10420077005** Collected: 02/07/18 09:16 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**91.7**	ug/m3	4.2	2.6	1.75		02/15/18 16:30	67-64-1	
Benzene	**<0.028**	ug/m3	0.057	0.028	1.75		02/15/18 16:30	71-43-2	
Bromodichloromethane	**0.086J**	ug/m3	0.12	0.049	1.75		02/15/18 16:30	75-27-4	
Bromoform	**<1.2**	ug/m3	9.2	1.2	1.75		02/15/18 16:30	75-25-2	
Bromomethane	**<0.36**	ug/m3	3.5	0.36	1.75		02/15/18 16:30	74-83-9	
1,3-Butadiene	**<0.038**	ug/m3	0.039	0.038	1.75		02/15/18 16:30	106-99-0	
2-Butanone (MEK)	**2.6J**	ug/m3	5.2	0.36	1.75		02/15/18 16:30	78-93-3	
Carbon disulfide	**17.6**	ug/m3	1.1	0.31	1.75		02/15/18 16:30	75-15-0	
Carbon tetrachloride	**2160**	ug/m3	3.0	1.5	46.9		02/17/18 01:39	56-23-5	
Chlorobenzene	**<0.31**	ug/m3	1.6	0.31	1.75		02/15/18 16:30	108-90-7	
Chloroethane	**<0.36**	ug/m3	2.3	0.36	1.75		02/15/18 16:30	75-00-3	
Chloroform	**2000**	ug/m3	2.3	0.99	46.9		02/17/18 01:39	67-66-3	
Chloromethane	**<0.23**	ug/m3	0.74	0.23	1.75		02/15/18 16:30	74-87-3	
Cyclohexane	**<0.40**	ug/m3	3.1	0.40	1.75		02/15/18 16:30	110-82-7	
Dibromochloromethane	**0.062J**	ug/m3	3.0	0.053	1.75		02/15/18 16:30	124-48-1	
1,2-Dibromoethane (EDB)	**<0.066**	ug/m3	0.14	0.066	1.75		02/15/18 16:30	106-93-4	
1,2-Dichlorobenzene	**<0.57**	ug/m3	2.1	0.57	1.75		02/15/18 16:30	95-50-1	
1,3-Dichlorobenzene	**<0.82**	ug/m3	2.1	0.82	1.75		02/15/18 16:30	541-73-1	
1,4-Dichlorobenzene	**<0.38**	ug/m3	2.1	0.38	1.75		02/15/18 16:30	106-46-7	
Dichlorodifluoromethane	**5.7**	ug/m3	1.8	0.73	1.75		02/15/18 16:30	75-71-8	
1,1-Dichloroethane	**0.070J**	ug/m3	0.072	0.026	1.75		02/15/18 16:30	75-34-3	
1,2-Dichloroethane	**0.11**	ug/m3	0.072	0.053	1.75		02/15/18 16:30	107-06-2	
1,1-Dichloroethene	**0.46**	ug/m3	0.071	0.035	1.75		02/15/18 16:30	75-35-4	
cis-1,2-Dichloroethene	**0.033J**	ug/m3	0.071	0.024	1.75		02/15/18 16:30	156-59-2	
trans-1,2-Dichloroethene	**0.061J**	ug/m3	0.071	0.037	1.75		02/15/18 16:30	156-60-5	
1,2-Dichloropropane	**0.075J**	ug/m3	0.082	0.022	1.75		02/15/18 16:30	78-87-5	
cis-1,3-Dichloropropene	**0.054J**	ug/m3	0.081	0.047	1.75		02/15/18 16:30	10061-01-5	
trans-1,3-Dichloropropene	**<0.049**	ug/m3	0.081	0.049	1.75		02/15/18 16:30	10061-02-6	
Dichlorotetrafluoroethane	**<0.77**	ug/m3	2.5	0.77	1.75		02/15/18 16:30	76-14-2	
Ethanol	**22.6**	ug/m3	1.7	0.81	1.75		02/15/18 16:30	64-17-5	CH,L1
Ethyl acetate	**<0.34**	ug/m3	1.3	0.34	1.75		02/15/18 16:30	141-78-6	
Ethylbenzene	**2.4**	ug/m3	1.5	0.30	1.75		02/15/18 16:30	100-41-4	
4-Ethyltoluene	**<0.37**	ug/m3	1.7	0.37	1.75		02/15/18 16:30	622-96-8	
n-Heptane	**5.6**	ug/m3	1.5	0.37	1.75		02/15/18 16:30	142-82-5	
Hexachloro-1,3-butadiene	**<1.5**	ug/m3	3.8	1.5	1.75		02/15/18 16:30	87-68-3	
n-Hexane	**20.7J**	ug/m3	33.6	15.6	46.9		02/17/18 01:39	110-54-3	
2-Hexanone	**<1.1**	ug/m3	9.1	1.1	1.75		02/15/18 16:30	591-78-6	
Isopropylbenzene (Cumene)	**<0.58**	ug/m3	4.4	0.58	1.75		02/15/18 16:30	98-82-8	
Methylene Chloride	**<71.3**	ug/m3	166	71.3	46.9		02/17/18 01:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.62**	ug/m3	9.1	0.62	1.75		02/15/18 16:30	108-10-1	
Methyl-tert-butyl ether	**<1.2**	ug/m3	6.4	1.2	1.75		02/15/18 16:30	1634-04-4	
Naphthalene	**<1.0**	ug/m3	4.7	1.0	1.75		02/15/18 16:30	91-20-3	
2-Propanol	**8.6**	ug/m3	4.4	2.2	1.75		02/15/18 16:30	67-63-0	
Propylene	**35.6**	ug/m3	0.61	0.27	1.75		02/15/18 16:30	115-07-1	
Styrene	**7.8**	ug/m3	3.8	0.29	1.75		02/15/18 16:30	100-42-5	CH
1,1,2,2-Tetrachloroethane	**0.76**	ug/m3	0.12	0.067	1.75		02/15/18 16:30	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV103A-5' **Lab ID: 10420077005** Collected: 02/07/18 09:16 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**29.3**	ug/m3	0.12	0.053	1.75		02/15/18 16:30	127-18-4	
Tetrahydrofuran	**<0.48**	ug/m3	1.0	0.48	1.75		02/15/18 16:30	109-99-9	
Toluene	**101**	ug/m3	1.3	0.28	1.75		02/15/18 16:30	108-88-3	
1,2,4-Trichlorobenzene	**<1.7**	ug/m3	6.6	1.7	1.75		02/15/18 16:30	120-82-1	
1,1,1-Trichloroethane	**0.056J**	ug/m3	0.097	0.043	1.75		02/15/18 16:30	71-55-6	
1,1,2-Trichloroethane	**<0.047**	ug/m3	0.097	0.047	1.75		02/15/18 16:30	79-00-5	
Trichloroethene	**0.17**	ug/m3	0.096	0.054	1.75		02/15/18 16:30	79-01-6	
Trichlorofluoromethane	**12.8**	ug/m3	2.0	0.73	1.75		02/15/18 16:30	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.65**	ug/m3	2.7	0.65	1.75		02/15/18 16:30	76-13-1	
1,2,4-Trimethylbenzene	**<0.30**	ug/m3	4.4	0.30	1.75		02/15/18 16:30	95-63-6	
1,3,5-Trimethylbenzene	**<0.72**	ug/m3	4.4	0.72	1.75		02/15/18 16:30	108-67-8	
Vinyl acetate	**<0.29**	ug/m3	1.3	0.29	1.75		02/15/18 16:30	108-05-4	
Vinyl chloride	**0.072**	ug/m3	0.046	0.045	1.75		02/15/18 16:30	75-01-4	
m&p-Xylene	**11.2**	ug/m3	7.7	0.61	1.75		02/15/18 16:30	179601-23-1	
o-Xylene	**4.6**	ug/m3	3.9	0.65	1.75		02/15/18 16:30	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV102A-15' **Lab ID: 10420077006** Collected: 02/07/18 09:18 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**26.9**	ug/m3	4.0	2.5	1.68		02/15/18 17:05	67-64-1	
Benzene	**0.65**	ug/m3	0.055	0.027	1.68		02/15/18 17:05	71-43-2	
Bromodichloromethane	**<0.047**	ug/m3	0.11	0.047	1.68		02/15/18 17:05	75-27-4	
Bromoform	**<1.2**	ug/m3	8.8	1.2	1.68		02/15/18 17:05	75-25-2	
Bromomethane	**<0.35**	ug/m3	3.3	0.35	1.68		02/15/18 17:05	74-83-9	
1,3-Butadiene	**<0.036**	ug/m3	0.038	0.036	1.68		02/15/18 17:05	106-99-0	
2-Butanone (MEK)	**3.0J**	ug/m3	5.0	0.34	1.68		02/15/18 17:05	78-93-3	
Carbon disulfide	**32.9**	ug/m3	1.1	0.30	1.68		02/15/18 17:05	75-15-0	
Carbon tetrachloride	**3500**	ug/m3	3.2	1.7	50.4		02/17/18 02:45	56-23-5	
Chlorobenzene	**<0.30**	ug/m3	1.6	0.30	1.68		02/15/18 17:05	108-90-7	
Chloroethane	**<0.34**	ug/m3	2.3	0.34	1.68		02/15/18 17:05	75-00-3	
Chloroform	**1500**	ug/m3	2.5	1.1	50.4		02/17/18 02:45	67-66-3	
Chloromethane	**<0.23**	ug/m3	0.71	0.23	1.68		02/15/18 17:05	74-87-3	
Cyclohexane	**<0.38**	ug/m3	2.9	0.38	1.68		02/15/18 17:05	110-82-7	
Dibromochloromethane	**0.057J**	ug/m3	2.9	0.051	1.68		02/15/18 17:05	124-48-1	
1,2-Dibromoethane (EDB)	**<0.063**	ug/m3	0.13	0.063	1.68		02/15/18 17:05	106-93-4	
1,2-Dichlorobenzene	**<0.55**	ug/m3	2.0	0.55	1.68		02/15/18 17:05	95-50-1	
1,3-Dichlorobenzene	**<0.78**	ug/m3	2.0	0.78	1.68		02/15/18 17:05	541-73-1	
1,4-Dichlorobenzene	**<0.37**	ug/m3	2.0	0.37	1.68		02/15/18 17:05	106-46-7	
Dichlorodifluoromethane	**6.2**	ug/m3	1.7	0.70	1.68		02/15/18 17:05	75-71-8	
1,1-Dichloroethane	**0.056J**	ug/m3	0.069	0.025	1.68		02/15/18 17:05	75-34-3	
1,2-Dichloroethane	**0.081**	ug/m3	0.069	0.051	1.68		02/15/18 17:05	107-06-2	
1,1-Dichloroethene	**<0.034**	ug/m3	0.068	0.034	1.68		02/15/18 17:05	75-35-4	
cis-1,2-Dichloroethene	**0.032J**	ug/m3	0.068	0.024	1.68		02/15/18 17:05	156-59-2	
trans-1,2-Dichloroethene	**0.074**	ug/m3	0.068	0.035	1.68		02/15/18 17:05	156-60-5	
1,2-Dichloropropane	**<0.021**	ug/m3	0.079	0.021	1.68		02/15/18 17:05	78-87-5	
cis-1,3-Dichloropropene	**0.060J**	ug/m3	0.077	0.046	1.68		02/15/18 17:05	10061-01-5	
trans-1,3-Dichloropropene	**0.077J**	ug/m3	0.077	0.047	1.68		02/15/18 17:05	10061-02-6	
Dichlorotetrafluoroethane	**<0.74**	ug/m3	2.4	0.74	1.68		02/15/18 17:05	76-14-2	
Ethanol	**2.6**	ug/m3	1.6	0.78	1.68		02/15/18 17:05	64-17-5	CH,L1
Ethyl acetate	**<0.33**	ug/m3	1.2	0.33	1.68		02/15/18 17:05	141-78-6	
Ethylbenzene	**12.1**	ug/m3	1.5	0.29	1.68		02/15/18 17:05	100-41-4	
4-Ethyltoluene	**<0.36**	ug/m3	1.7	0.36	1.68		02/15/18 17:05	622-96-8	
n-Heptane	**6.7**	ug/m3	1.4	0.35	1.68		02/15/18 17:05	142-82-5	
Hexachloro-1,3-butadiene	**<1.5**	ug/m3	3.6	1.5	1.68		02/15/18 17:05	87-68-3	
n-Hexane	**4.1**	ug/m3	1.2	0.56	1.68		02/15/18 17:05	110-54-3	
2-Hexanone	**<1.0**	ug/m3	8.7	1.0	1.68		02/15/18 17:05	591-78-6	
Isopropylbenzene (Cumene)	**<0.55**	ug/m3	4.2	0.55	1.68		02/15/18 17:05	98-82-8	
Methylene Chloride	**4.7J**	ug/m3	5.9	2.6	1.68		02/15/18 17:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.60**	ug/m3	8.7	0.60	1.68		02/15/18 17:05	108-10-1	
Methyl-tert-butyl ether	**<1.1**	ug/m3	6.1	1.1	1.68		02/15/18 17:05	1634-04-4	
Naphthalene	**<1.0**	ug/m3	4.5	1.0	1.68		02/15/18 17:05	91-20-3	
2-Propanol	**<2.1**	ug/m3	4.2	2.1	1.68		02/15/18 17:05	67-63-0	
Propylene	**19.8**	ug/m3	0.59	0.26	1.68		02/15/18 17:05	115-07-1	
Styrene	**15.1**	ug/m3	3.6	0.28	1.68		02/15/18 17:05	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.8**	ug/m3	0.12	0.065	1.68		02/15/18 17:05	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV102A-15' **Lab ID: 10420077006** Collected: 02/07/18 09:18 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**73.6**	ug/m3	0.12	0.051	1.68		02/15/18 17:05	127-18-4	
Tetrahydrofuran	**1.4**	ug/m3	1.0	0.46	1.68		02/15/18 17:05	109-99-9	
Toluene	**872**	ug/m3	38.6	8.0	50.4		02/17/18 02:45	108-88-3	
1,2,4-Trichlorobenzene	**<1.6**	ug/m3	6.3	1.6	1.68		02/15/18 17:05	120-82-1	
1,1,1-Trichloroethane	**0.093J**	ug/m3	0.093	0.042	1.68		02/15/18 17:05	71-55-6	
1,1,2-Trichloroethane	**<0.045**	ug/m3	0.093	0.045	1.68		02/15/18 17:05	79-00-5	
Trichloroethene	**0.27**	ug/m3	0.092	0.052	1.68		02/15/18 17:05	79-01-6	
Trichlorofluoromethane	**20.8**	ug/m3	1.9	0.70	1.68		02/15/18 17:05	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.62**	ug/m3	2.6	0.62	1.68		02/15/18 17:05	76-13-1	
1,2,4-Trimethylbenzene	**<0.29**	ug/m3	4.2	0.29	1.68		02/15/18 17:05	95-63-6	
1,3,5-Trimethylbenzene	**<0.69**	ug/m3	4.2	0.69	1.68		02/15/18 17:05	108-67-8	
Vinyl acetate	**<0.28**	ug/m3	1.2	0.28	1.68		02/15/18 17:05	108-05-4	
Vinyl chloride	**<0.043**	ug/m3	0.044	0.043	1.68		02/15/18 17:05	75-01-4	
m&p-Xylene	**55.4**	ug/m3	7.4	0.59	1.68		02/15/18 17:05	179601-23-1	
o-Xylene	**12.7**	ug/m3	3.7	0.62	1.68		02/15/18 17:05	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV101B-25' **Lab ID: 10420077007** Collected: 02/07/18 11:22 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**<2.5**	ug/m3	4.0	2.5	1.68		02/15/18 17:40	67-64-1	
Benzene	**<0.027**	ug/m3	0.055	0.027	1.68		02/15/18 17:40	71-43-2	
Bromodichloromethane	**<0.047**	ug/m3	0.11	0.047	1.68		02/15/18 17:40	75-27-4	
Bromoform	**<1.2**	ug/m3	8.8	1.2	1.68		02/15/18 17:40	75-25-2	
Bromomethane	**<0.35**	ug/m3	3.3	0.35	1.68		02/15/18 17:40	74-83-9	
1,3-Butadiene	**<0.036**	ug/m3	0.038	0.036	1.68		02/15/18 17:40	106-99-0	
2-Butanone (MEK)	**3.2J**	ug/m3	5.0	0.34	1.68		02/15/18 17:40	78-93-3	
Carbon disulfide	**199**	ug/m3	1.1	0.30	1.68		02/15/18 17:40	75-15-0	E
Carbon tetrachloride	**25700**	ug/m3	8.6	4.4	134.4		02/17/18 03:51	56-23-5	
Chlorobenzene	**<0.30**	ug/m3	1.6	0.30	1.68		02/15/18 17:40	108-90-7	
Chloroethane	**<0.34**	ug/m3	2.3	0.34	1.68		02/15/18 17:40	75-00-3	
Chloroform	**4170**	ug/m3	6.7	2.8	134.4		02/17/18 03:51	67-66-3	A3
Chloromethane	**<0.23**	ug/m3	0.71	0.23	1.68		02/15/18 17:40	74-87-3	
Cyclohexane	**12.2**	ug/m3	2.9	0.38	1.68		02/15/18 17:40	110-82-7	
Dibromochloromethane	**0.062J**	ug/m3	2.9	0.051	1.68		02/15/18 17:40	124-48-1	
1,2-Dibromoethane (EDB)	**<0.063**	ug/m3	0.13	0.063	1.68		02/15/18 17:40	106-93-4	
1,2-Dichlorobenzene	**<0.55**	ug/m3	2.0	0.55	1.68		02/15/18 17:40	95-50-1	
1,3-Dichlorobenzene	**<0.78**	ug/m3	2.0	0.78	1.68		02/15/18 17:40	541-73-1	
1,4-Dichlorobenzene	**<0.37**	ug/m3	2.0	0.37	1.68		02/15/18 17:40	106-46-7	
Dichlorodifluoromethane	**1.4J**	ug/m3	1.7	0.70	1.68		02/15/18 17:40	75-71-8	
1,1-Dichloroethane	**0.087**	ug/m3	0.069	0.025	1.68		02/15/18 17:40	75-34-3	
1,2-Dichloroethane	**0.11**	ug/m3	0.069	0.051	1.68		02/15/18 17:40	107-06-2	
1,1-Dichloroethene	**0.36**	ug/m3	0.068	0.034	1.68		02/15/18 17:40	75-35-4	
cis-1,2-Dichloroethene	**0.037J**	ug/m3	0.068	0.024	1.68		02/15/18 17:40	156-59-2	
trans-1,2-Dichloroethene	**<0.035**	ug/m3	0.068	0.035	1.68		02/15/18 17:40	156-60-5	
1,2-Dichloropropane	**0.070J**	ug/m3	0.079	0.021	1.68		02/15/18 17:40	78-87-5	
cis-1,3-Dichloropropene	**<0.046**	ug/m3	0.077	0.046	1.68		02/15/18 17:40	10061-01-5	
trans-1,3-Dichloropropene	**<0.047**	ug/m3	0.077	0.047	1.68		02/15/18 17:40	10061-02-6	
Dichlorotetrafluoroethane	**<0.74**	ug/m3	2.4	0.74	1.68		02/15/18 17:40	76-14-2	
Ethanol	**8.6**	ug/m3	1.6	0.78	1.68		02/15/18 17:40	64-17-5	CH,L1
Ethyl acetate	**<0.33**	ug/m3	1.2	0.33	1.68		02/15/18 17:40	141-78-6	
Ethylbenzene	**7.8**	ug/m3	1.5	0.29	1.68		02/15/18 17:40	100-41-4	
4-Ethyltoluene	**<0.36**	ug/m3	1.7	0.36	1.68		02/15/18 17:40	622-96-8	
n-Heptane	**6.0**	ug/m3	1.4	0.35	1.68		02/15/18 17:40	142-82-5	
Hexachloro-1,3-butadiene	**<1.5**	ug/m3	3.6	1.5	1.68		02/15/18 17:40	87-68-3	
n-Hexane	**3.5**	ug/m3	1.2	0.56	1.68		02/15/18 17:40	110-54-3	
2-Hexanone	**<1.0**	ug/m3	8.7	1.0	1.68		02/15/18 17:40	591-78-6	
Isopropylbenzene (Cumene)	**<0.55**	ug/m3	4.2	0.55	1.68		02/15/18 17:40	98-82-8	
Methylene Chloride	**<2.6**	ug/m3	5.9	2.6	1.68		02/15/18 17:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	**4.1J**	ug/m3	8.7	0.60	1.68		02/15/18 17:40	108-10-1	
Methyl-tert-butyl ether	**<1.1**	ug/m3	6.1	1.1	1.68		02/15/18 17:40	1634-04-4	
Naphthalene	**<1.0**	ug/m3	4.5	1.0	1.68		02/15/18 17:40	91-20-3	
2-Propanol	**<2.1**	ug/m3	4.2	2.1	1.68		02/15/18 17:40	67-63-0	
Propylene	**<0.26**	ug/m3	0.59	0.26	1.68		02/15/18 17:40	115-07-1	
Styrene	**27.2**	ug/m3	3.6	0.28	1.68		02/15/18 17:40	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.9**	ug/m3	0.12	0.065	1.68		02/15/18 17:40	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV101B-25' **Lab ID: 10420077007** Collected: 02/07/18 11:22 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**112**	ug/m3	0.12	0.051	1.68		02/15/18 17:40	127-18-4	
Tetrahydrofuran	**<0.46**	ug/m3	1.0	0.46	1.68		02/15/18 17:40	109-99-9	
Toluene	**182**	ug/m3	1.3	0.27	1.68		02/15/18 17:40	108-88-3	
1,2,4-Trichlorobenzene	**<1.6**	ug/m3	6.3	1.6	1.68		02/15/18 17:40	120-82-1	
1,1,1-Trichloroethane	**0.12**	ug/m3	0.093	0.042	1.68		02/15/18 17:40	71-55-6	
1,1,2-Trichloroethane	**<0.045**	ug/m3	0.093	0.045	1.68		02/15/18 17:40	79-00-5	
Trichloroethene	**0.21**	ug/m3	0.092	0.052	1.68		02/15/18 17:40	79-01-6	
Trichlorofluoromethane	**<0.70**	ug/m3	1.9	0.70	1.68		02/15/18 17:40	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.62**	ug/m3	2.6	0.62	1.68		02/15/18 17:40	76-13-1	
1,2,4-Trimethylbenzene	**<0.29**	ug/m3	4.2	0.29	1.68		02/15/18 17:40	95-63-6	
1,3,5-Trimethylbenzene	**<0.69**	ug/m3	4.2	0.69	1.68		02/15/18 17:40	108-67-8	
Vinyl acetate	**<0.28**	ug/m3	1.2	0.28	1.68		02/15/18 17:40	108-05-4	
Vinyl chloride	**<0.043**	ug/m3	0.044	0.043	1.68		02/15/18 17:40	75-01-4	
m&p-Xylene	**33.1**	ug/m3	7.4	0.59	1.68		02/15/18 17:40	179601-23-1	
o-Xylene	**14.6**	ug/m3	3.7	0.62	1.68		02/15/18 17:40	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV101A-5' **Lab ID: 10420077008** Collected: 02/07/18 11:50 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**<2.6**	ug/m3	4.2	2.6	1.75		02/15/18 18:47	67-64-1	
Benzene	**1.0**	ug/m3	0.057	0.028	1.75		02/15/18 18:47	71-43-2	
Bromodichloromethane	**<0.049**	ug/m3	0.12	0.049	1.75		02/15/18 18:47	75-27-4	
Bromoform	**<1.2**	ug/m3	9.2	1.2	1.75		02/15/18 18:47	75-25-2	
Bromomethane	**<0.36**	ug/m3	3.5	0.36	1.75		02/15/18 18:47	74-83-9	
1,3-Butadiene	**<0.038**	ug/m3	0.039	0.038	1.75		02/15/18 18:47	106-99-0	
2-Butanone (MEK)	**2.0J**	ug/m3	5.2	0.36	1.75		02/15/18 18:47	78-93-3	
Carbon disulfide	**46.5**	ug/m3	1.1	0.31	1.75		02/15/18 18:47	75-15-0	
Carbon tetrachloride	**8.7**	ug/m3	0.11	0.058	1.75		02/15/18 18:47	56-23-5	
Chlorobenzene	**<0.31**	ug/m3	1.6	0.31	1.75		02/15/18 18:47	108-90-7	
Chloroethane	**<0.36**	ug/m3	2.3	0.36	1.75		02/15/18 18:47	75-00-3	
Chloroform	**3.4**	ug/m3	0.087	0.037	1.75		02/15/18 18:47	67-66-3	C0,E
Chloromethane	**<0.23**	ug/m3	0.74	0.23	1.75		02/15/18 18:47	74-87-3	
Cyclohexane	**31.1**	ug/m3	3.1	0.40	1.75		02/15/18 18:47	110-82-7	
Dibromochloromethane	**0.092J**	ug/m3	3.0	0.053	1.75		02/15/18 18:47	124-48-1	
1,2-Dibromoethane (EDB)	**0.071J**	ug/m3	0.14	0.066	1.75		02/15/18 18:47	106-93-4	
1,2-Dichlorobenzene	**<0.57**	ug/m3	2.1	0.57	1.75		02/15/18 18:47	95-50-1	
1,3-Dichlorobenzene	**<0.82**	ug/m3	2.1	0.82	1.75		02/15/18 18:47	541-73-1	
1,4-Dichlorobenzene	**<0.38**	ug/m3	2.1	0.38	1.75		02/15/18 18:47	106-46-7	
Dichlorodifluoromethane	**<0.73**	ug/m3	1.8	0.73	1.75		02/15/18 18:47	75-71-8	
1,1-Dichloroethane	**0.058J**	ug/m3	0.072	0.026	1.75		02/15/18 18:47	75-34-3	
1,2-Dichloroethane	**0.079**	ug/m3	0.072	0.053	1.75		02/15/18 18:47	107-06-2	
1,1-Dichloroethene	**<0.035**	ug/m3	0.071	0.035	1.75		02/15/18 18:47	75-35-4	
cis-1,2-Dichloroethene	**0.062J**	ug/m3	0.071	0.024	1.75		02/15/18 18:47	156-59-2	
trans-1,2-Dichloroethene	**<0.037**	ug/m3	0.071	0.037	1.75		02/15/18 18:47	156-60-5	
1,2-Dichloropropane	**0.074J**	ug/m3	0.082	0.022	1.75		02/15/18 18:47	78-87-5	
cis-1,3-Dichloropropene	**0.077J**	ug/m3	0.081	0.047	1.75		02/15/18 18:47	10061-01-5	
trans-1,3-Dichloropropene	**<0.049**	ug/m3	0.081	0.049	1.75		02/15/18 18:47	10061-02-6	
Dichlorotetrafluoroethane	**<0.77**	ug/m3	2.5	0.77	1.75		02/15/18 18:47	76-14-2	
Ethanol	**2.5**	ug/m3	1.7	0.81	1.75		02/15/18 18:47	64-17-5	CH,L1
Ethyl acetate	**<0.34**	ug/m3	1.3	0.34	1.75		02/15/18 18:47	141-78-6	
Ethylbenzene	**9.9**	ug/m3	1.5	0.30	1.75		02/15/18 18:47	100-41-4	
4-Ethyltoluene	**<0.37**	ug/m3	1.7	0.37	1.75		02/15/18 18:47	622-96-8	
n-Heptane	**3.5**	ug/m3	1.5	0.37	1.75		02/15/18 18:47	142-82-5	
Hexachloro-1,3-butadiene	**<1.5**	ug/m3	3.8	1.5	1.75		02/15/18 18:47	87-68-3	
n-Hexane	**2.9**	ug/m3	1.3	0.58	1.75		02/15/18 18:47	110-54-3	
2-Hexanone	**<1.1**	ug/m3	9.1	1.1	1.75		02/15/18 18:47	591-78-6	
Isopropylbenzene (Cumene)	**<0.58**	ug/m3	4.4	0.58	1.75		02/15/18 18:47	98-82-8	
Methylene Chloride	**6.8**	ug/m3	6.2	2.7	1.75		02/15/18 18:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.62**	ug/m3	9.1	0.62	1.75		02/15/18 18:47	108-10-1	
Methyl-tert-butyl ether	**<1.2**	ug/m3	6.4	1.2	1.75		02/15/18 18:47	1634-04-4	
Naphthalene	**3.1J**	ug/m3	4.7	1.0	1.75		02/15/18 18:47	91-20-3	
2-Propanol	**<2.2**	ug/m3	4.4	2.2	1.75		02/15/18 18:47	67-63-0	
Propylene	**<0.27**	ug/m3	0.61	0.27	1.75		02/15/18 18:47	115-07-1	
Styrene	**25.7**	ug/m3	3.8	0.29	1.75		02/15/18 18:47	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.8**	ug/m3	0.12	0.067	1.75		02/15/18 18:47	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV101A-5' **Lab ID: 10420077008** Collected: 02/07/18 11:50 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**54.6**	ug/m3	0.12	0.053	1.75		02/15/18 18:47	127-18-4	
Tetrahydrofuran	**0.94J**	ug/m3	1.0	0.48	1.75		02/15/18 18:47	109-99-9	
Toluene	**202**	ug/m3	1.3	0.28	1.75		02/15/18 18:47	108-88-3	
1,2,4-Trichlorobenzene	**<1.7**	ug/m3	6.6	1.7	1.75		02/15/18 18:47	120-82-1	
1,1,1-Trichloroethane	**0.075J**	ug/m3	0.097	0.043	1.75		02/15/18 18:47	71-55-6	
1,1,2-Trichloroethane	**<0.047**	ug/m3	0.097	0.047	1.75		02/15/18 18:47	79-00-5	
Trichloroethene	**0.30**	ug/m3	0.096	0.054	1.75		02/15/18 18:47	79-01-6	
Trichlorofluoromethane	**2.1**	ug/m3	2.0	0.73	1.75		02/15/18 18:47	75-69-4	
1,1,2-Trichlorotrifluoroethane	**0.82J**	ug/m3	2.7	0.65	1.75		02/15/18 18:47	76-13-1	
1,2,4-Trimethylbenzene	**<0.30**	ug/m3	4.4	0.30	1.75		02/15/18 18:47	95-63-6	
1,3,5-Trimethylbenzene	**<0.72**	ug/m3	4.4	0.72	1.75		02/15/18 18:47	108-67-8	
Vinyl acetate	**<0.29**	ug/m3	1.3	0.29	1.75		02/15/18 18:47	108-05-4	
Vinyl chloride	**0.16**	ug/m3	0.046	0.045	1.75		02/15/18 18:47	75-01-4	
m&p-Xylene	**44.4**	ug/m3	7.7	0.61	1.75		02/15/18 18:47	179601-23-1	
o-Xylene	**14.9**	ug/m3	3.9	0.65	1.75		02/15/18 18:47	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV102A-5' **Lab ID: 10420077009** Collected: 02/07/18 11:58 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**49.9**	ug/m3	7.5	4.6	3.1		02/15/18 19:22	67-64-1	
Benzene	**1.3**	ug/m3	0.10	0.050	3.1		02/15/18 19:22	71-43-2	
Bromodichloromethane	**0.097J**	ug/m3	0.21	0.087	3.1		02/15/18 19:22	75-27-4	
Bromoform	**<2.1**	ug/m3	16.3	2.1	3.1		02/15/18 19:22	75-25-2	
Bromomethane	**<0.64**	ug/m3	6.1	0.64	3.1		02/15/18 19:22	74-83-9	
1,3-Butadiene	**<0.067**	ug/m3	0.070	0.067	3.1		02/15/18 19:22	106-99-0	
2-Butanone (MEK)	**<0.63**	ug/m3	9.3	0.63	3.1		02/15/18 19:22	78-93-3	
Carbon disulfide	**41.4**	ug/m3	2.0	0.55	3.1		02/15/18 19:22	75-15-0	
Carbon tetrachloride	**903**	ug/m3	4.0	2.0	62		02/17/18 02:12	56-23-5	
Chlorobenzene	**<0.55**	ug/m3	2.9	0.55	3.1		02/15/18 19:22	108-90-7	
Chloroethane	**<0.63**	ug/m3	4.2	0.63	3.1		02/15/18 19:22	75-00-3	
Chloroform	**509**	ug/m3	3.1	1.3	62		02/17/18 02:12	67-66-3	
Chloromethane	**<0.42**	ug/m3	1.3	0.42	3.1		02/15/18 19:22	74-87-3	
Cyclohexane	**11.1**	ug/m3	5.4	0.70	3.1		02/15/18 19:22	110-82-7	
Dibromochloromethane	**0.10J**	ug/m3	5.4	0.094	3.1		02/15/18 19:22	124-48-1	
1,2-Dibromoethane (EDB)	**<0.12**	ug/m3	0.24	0.12	3.1		02/15/18 19:22	106-93-4	
1,2-Dichlorobenzene	**<1.0**	ug/m3	3.8	1.0	3.1		02/15/18 19:22	95-50-1	
1,3-Dichlorobenzene	**<1.4**	ug/m3	3.8	1.4	3.1		02/15/18 19:22	541-73-1	
1,4-Dichlorobenzene	**<0.68**	ug/m3	3.8	0.68	3.1		02/15/18 19:22	106-46-7	
Dichlorodifluoromethane	**5.4**	ug/m3	3.1	1.3	3.1		02/15/18 19:22	75-71-8	
1,1-Dichloroethane	**0.088J**	ug/m3	0.13	0.046	3.1		02/15/18 19:22	75-34-3	
1,2-Dichloroethane	**0.099J**	ug/m3	0.13	0.093	3.1		02/15/18 19:22	107-06-2	
1,1-Dichloroethene	**<0.063**	ug/m3	0.12	0.063	3.1		02/15/18 19:22	75-35-4	
cis-1,2-Dichloroethene	**0.052J**	ug/m3	0.12	0.043	3.1		02/15/18 19:22	156-59-2	
trans-1,2-Dichloroethene	**0.10J**	ug/m3	0.12	0.065	3.1		02/15/18 19:22	156-60-5	
1,2-Dichloropropane	**<0.038**	ug/m3	0.15	0.038	3.1		02/15/18 19:22	78-87-5	
cis-1,3-Dichloropropene	**0.091J**	ug/m3	0.14	0.084	3.1		02/15/18 19:22	10061-01-5	
trans-1,3-Dichloropropene	**<0.087**	ug/m3	0.14	0.087	3.1		02/15/18 19:22	10061-02-6	
Dichlorotetrafluoroethane	**<1.4**	ug/m3	4.4	1.4	3.1		02/15/18 19:22	76-14-2	
Ethanol	**13.7**	ug/m3	3.0	1.4	3.1		02/15/18 19:22	64-17-5	CH,L1
Ethyl acetate	**<0.61**	ug/m3	2.3	0.61	3.1		02/15/18 19:22	141-78-6	
Ethylbenzene	**15.9**	ug/m3	2.7	0.53	3.1		02/15/18 19:22	100-41-4	
4-Ethyltoluene	**<0.66**	ug/m3	3.1	0.66	3.1		02/15/18 19:22	622-96-8	
n-Heptane	**5.9**	ug/m3	2.6	0.65	3.1		02/15/18 19:22	142-82-5	
Hexachloro-1,3-butadiene	**<2.7**	ug/m3	6.7	2.7	3.1		02/15/18 19:22	87-68-3	
n-Hexane	**3.9**	ug/m3	2.2	1.0	3.1		02/15/18 19:22	110-54-3	
2-Hexanone	**<1.9**	ug/m3	16.1	1.9	3.1		02/15/18 19:22	591-78-6	
Isopropylbenzene (Cumene)	**<1.0**	ug/m3	7.8	1.0	3.1		02/15/18 19:22	98-82-8	
Methylene Chloride	**15.6**	ug/m3	10.9	4.7	3.1		02/15/18 19:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<1.1**	ug/m3	16.1	1.1	3.1		02/15/18 19:22	108-10-1	
Methyl-tert-butyl ether	**<2.1**	ug/m3	11.3	2.1	3.1		02/15/18 19:22	1634-04-4	
Naphthalene	**<1.9**	ug/m3	8.2	1.9	3.1		02/15/18 19:22	91-20-3	
2-Propanol	**<3.9**	ug/m3	7.8	3.9	3.1		02/15/18 19:22	67-63-0	
Propylene	**35.4**	ug/m3	1.1	0.49	3.1		02/15/18 19:22	115-07-1	
Styrene	**17.3**	ug/m3	6.7	0.52	3.1		02/15/18 19:22	100-42-5	CH
1,1,2,2-Tetrachloroethane	**2.0**	ug/m3	0.22	0.12	3.1		02/15/18 19:22	79-34-5	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: SV102A-5' **Lab ID: 10420077009** Collected: 02/07/18 11:58 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**73.8**	ug/m3	0.21	0.094	3.1		02/15/18 19:22	127-18-4	
Tetrahydrofuran	**1.3J**	ug/m3	1.9	0.85	3.1		02/15/18 19:22	109-99-9	
Toluene	**331**	ug/m3	2.4	0.49	3.1		02/15/18 19:22	108-88-3	
1,2,4-Trichlorobenzene	**<3.0**	ug/m3	11.7	3.0	3.1		02/15/18 19:22	120-82-1	
1,1,1-Trichloroethane	**<0.077**	ug/m3	0.17	0.077	3.1		02/15/18 19:22	71-55-6	
1,1,2-Trichloroethane	**<0.083**	ug/m3	0.17	0.083	3.1		02/15/18 19:22	79-00-5	
Trichloroethene	**0.29**	ug/m3	0.17	0.095	3.1		02/15/18 19:22	79-01-6	
Trichlorofluoromethane	**13.6**	ug/m3	3.5	1.3	3.1		02/15/18 19:22	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<1.1**	ug/m3	4.8	1.1	3.1		02/15/18 19:22	76-13-1	
1,2,4-Trimethylbenzene	**<0.53**	ug/m3	7.7	0.53	3.1		02/15/18 19:22	95-63-6	
1,3,5-Trimethylbenzene	**<1.3**	ug/m3	7.7	1.3	3.1		02/15/18 19:22	108-67-8	
Vinyl acetate	**3.3**	ug/m3	2.2	0.51	3.1		02/15/18 19:22	108-05-4	
Vinyl chloride	**<0.079**	ug/m3	0.081	0.079	3.1		02/15/18 19:22	75-01-4	
m&p-Xylene	**75.9**	ug/m3	13.7	1.1	3.1		02/15/18 19:22	179601-23-1	
o-Xylene	**16.7**	ug/m3	6.8	1.2	3.1		02/15/18 19:22	95-47-6	

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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: DUP-1 **Lab ID: 10420077010** Collected: 02/07/18 00:00 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Acetone	**69.8**	ug/m3	4.0	2.5	1.68		02/15/18 19:56	67-64-1	
Benzene	**<0.027**	ug/m3	0.055	0.027	1.68		02/15/18 19:56	71-43-2	
Bromodichloromethane	**<0.047**	ug/m3	0.11	0.047	1.68		02/15/18 19:56	75-27-4	
Bromoform	**<1.2**	ug/m3	8.8	1.2	1.68		02/15/18 19:56	75-25-2	
Bromomethane	**<0.35**	ug/m3	3.3	0.35	1.68		02/15/18 19:56	74-83-9	
1,3-Butadiene	**<0.036**	ug/m3	0.038	0.036	1.68		02/15/18 19:56	106-99-0	
2-Butanone (MEK)	**4.9J**	ug/m3	5.0	0.34	1.68		02/15/18 19:56	78-93-3	
Carbon disulfide	**102**	ug/m3	31.9	9.0	50.4		02/17/18 03:18	75-15-0	
Carbon tetrachloride	**28000**	ug/m3	85.9	42.7	134.4		02/20/18 02:17	56-23-5	A3
Chlorobenzene	**<0.30**	ug/m3	1.6	0.30	1.68		02/15/18 19:56	108-90-7	
Chloroethane	**<0.34**	ug/m3	2.3	0.34	1.68		02/15/18 19:56	75-00-3	
Chloroform	**2220**	ug/m3	2.5	1.1	50.4		02/17/18 03:18	67-66-3	A3
Chloromethane	**<0.23**	ug/m3	0.71	0.23	1.68		02/15/18 19:56	74-87-3	
Cyclohexane	**<0.38**	ug/m3	2.9	0.38	1.68		02/15/18 19:56	110-82-7	
Dibromochloromethane	**0.060J**	ug/m3	2.9	0.051	1.68		02/15/18 19:56	124-48-1	
1,2-Dibromoethane (EDB)	**<0.063**	ug/m3	0.13	0.063	1.68		02/15/18 19:56	106-93-4	
1,2-Dichlorobenzene	**<0.55**	ug/m3	2.0	0.55	1.68		02/15/18 19:56	95-50-1	
1,3-Dichlorobenzene	**<0.78**	ug/m3	2.0	0.78	1.68		02/15/18 19:56	541-73-1	
1,4-Dichlorobenzene	**<0.37**	ug/m3	2.0	0.37	1.68		02/15/18 19:56	106-46-7	
Dichlorodifluoromethane	**1.6J**	ug/m3	1.7	0.70	1.68		02/15/18 19:56	75-71-8	
1,1-Dichloroethane	**0.077**	ug/m3	0.069	0.025	1.68		02/15/18 19:56	75-34-3	
1,2-Dichloroethane	**0.11**	ug/m3	0.069	0.051	1.68		02/15/18 19:56	107-06-2	
1,1-Dichloroethene	**<0.034**	ug/m3	0.068	0.034	1.68		02/15/18 19:56	75-35-4	
cis-1,2-Dichloroethene	**<0.024**	ug/m3	0.068	0.024	1.68		02/15/18 19:56	156-59-2	
trans-1,2-Dichloroethene	**<0.035**	ug/m3	0.068	0.035	1.68		02/15/18 19:56	156-60-5	
1,2-Dichloropropane	**<0.021**	ug/m3	0.079	0.021	1.68		02/15/18 19:56	78-87-5	
cis-1,3-Dichloropropene	**<0.046**	ug/m3	0.077	0.046	1.68		02/15/18 19:56	10061-01-5	
trans-1,3-Dichloropropene	**<0.047**	ug/m3	0.077	0.047	1.68		02/15/18 19:56	10061-02-6	
Dichlorotetrafluoroethane	**<0.74**	ug/m3	2.4	0.74	1.68		02/15/18 19:56	76-14-2	
Ethanol	**13.7**	ug/m3	1.6	0.78	1.68		02/15/18 19:56	64-17-5	CH,L1
Ethyl acetate	**<0.33**	ug/m3	1.2	0.33	1.68		02/15/18 19:56	141-78-6	
Ethylbenzene	**7.9**	ug/m3	1.5	0.29	1.68		02/15/18 19:56	100-41-4	
4-Ethyltoluene	**<0.36**	ug/m3	1.7	0.36	1.68		02/15/18 19:56	622-96-8	
n-Heptane	**6.7**	ug/m3	1.4	0.35	1.68		02/15/18 19:56	142-82-5	
Hexachloro-1,3-butadiene	**<1.5**	ug/m3	3.6	1.5	1.68		02/15/18 19:56	87-68-3	
n-Hexane	**4.0**	ug/m3	1.2	0.56	1.68		02/15/18 19:56	110-54-3	
2-Hexanone	**<1.0**	ug/m3	8.7	1.0	1.68		02/15/18 19:56	591-78-6	
Isopropylbenzene (Cumene)	**1.3J**	ug/m3	4.2	0.55	1.68		02/15/18 19:56	98-82-8	
Methylene Chloride	**<2.6**	ug/m3	5.9	2.6	1.68		02/15/18 19:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	**4.2J**	ug/m3	8.7	0.60	1.68		02/15/18 19:56	108-10-1	
Methyl-tert-butyl ether	**<1.1**	ug/m3	6.1	1.1	1.68		02/15/18 19:56	1634-04-4	
Naphthalene	**<1.0**	ug/m3	4.5	1.0	1.68		02/15/18 19:56	91-20-3	
2-Propanol	**<2.1**	ug/m3	4.2	2.1	1.68		02/15/18 19:56	67-63-0	
Propylene	**<0.26**	ug/m3	0.59	0.26	1.68		02/15/18 19:56	115-07-1	
Styrene	**28.0**	ug/m3	3.6	0.28	1.68		02/15/18 19:56	100-42-5	CH
1,1,2,2-Tetrachloroethane	**1.9**	ug/m3	0.12	0.065	1.68		02/15/18 19:56	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Sample: DUP-1 **Lab ID: 10420077010** Collected: 02/07/18 00:00 Received: 02/09/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Tetrachloroethene	**115**	ug/m3	0.12	0.051	1.68		02/15/18 19:56	127-18-4	
Tetrahydrofuran	**2.9**	ug/m3	1.0	0.46	1.68		02/15/18 19:56	109-99-9	
Toluene	**185**	ug/m3	1.3	0.27	1.68		02/15/18 19:56	108-88-3	
1,2,4-Trichlorobenzene	**<1.6**	ug/m3	6.3	1.6	1.68		02/15/18 19:56	120-82-1	
1,1,1-Trichloroethane	**0.13**	ug/m3	0.093	0.042	1.68		02/15/18 19:56	71-55-6	
1,1,2-Trichloroethane	**<0.045**	ug/m3	0.093	0.045	1.68		02/15/18 19:56	79-00-5	
Trichloroethene	**0.23**	ug/m3	0.092	0.052	1.68		02/15/18 19:56	79-01-6	
Trichlorofluoromethane	**8.0**	ug/m3	1.9	0.70	1.68		02/15/18 19:56	75-69-4	
1,1,2-Trichlorotrifluoroethane	**<0.62**	ug/m3	2.6	0.62	1.68		02/15/18 19:56	76-13-1	
1,2,4-Trimethylbenzene	**<0.29**	ug/m3	4.2	0.29	1.68		02/15/18 19:56	95-63-6	
1,3,5-Trimethylbenzene	**<0.69**	ug/m3	4.2	0.69	1.68		02/15/18 19:56	108-67-8	
Vinyl acetate	**<0.28**	ug/m3	1.2	0.28	1.68		02/15/18 19:56	108-05-4	
Vinyl chloride	**0.072**	ug/m3	0.044	0.043	1.68		02/15/18 19:56	75-01-4	
m&p-Xylene	**34.0**	ug/m3	7.4	0.59	1.68		02/15/18 19:56	179601-23-1	
o-Xylene	**14.3**	ug/m3	3.7	0.62	1.68		02/15/18 19:56	95-47-6	

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QUALITY CONTROL DATA

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

QC Batch: 523234 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10420077001, 10420077002, 10420077003, 10420077004, 10420077005, 10420077006, 10420077007, 10420077008, 10420077009, 10420077010

METHOD BLANK: 2840490 Matrix: Air
Associated Lab Samples: 10420077001, 10420077002, 10420077003, 10420077004, 10420077005, 10420077006, 10420077007, 10420077008, 10420077009, 10420077010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	<0.025	0.056	0.025	02/15/18 12:26	
1,1,2,2-Tetrachloroethane	ug/m3	0.045J	0.070	0.038	02/15/18 12:26	
1,1,2-Trichloroethane	ug/m3	<0.027	0.056	0.027	02/15/18 12:26	
1,1,2-Trichlorotrifluoroethane	ug/m3	<0.37	1.6	0.37	02/15/18 12:26	
1,1-Dichloroethane	ug/m3	<0.015	0.041	0.015	02/15/18 12:26	
1,1-Dichloroethene	ug/m3	<0.020	0.040	0.020	02/15/18 12:26	
1,2,4-Trichlorobenzene	ug/m3	<0.96	3.8	0.96	02/15/18 12:26	
1,2,4-Trimethylbenzene	ug/m3	<0.17	2.5	0.17	02/15/18 12:26	
1,2-Dibromoethane (EDB)	ug/m3	0.040J	0.078	0.038	02/15/18 12:26	
1,2-Dichlorobenzene	ug/m3	<0.33	1.2	0.33	02/15/18 12:26	
1,2-Dichloroethane	ug/m3	<0.030	0.041	0.030	02/15/18 12:26	
1,2-Dichloropropane	ug/m3	<0.012	0.047	0.012	02/15/18 12:26	
1,3,5-Trimethylbenzene	ug/m3	<0.41	2.5	0.41	02/15/18 12:26	
1,3-Butadiene	ug/m3	<0.022	0.022	0.022	02/15/18 12:26	
1,3-Dichlorobenzene	ug/m3	<0.47	1.2	0.47	02/15/18 12:26	
1,4-Dichlorobenzene	ug/m3	<0.22	1.2	0.22	02/15/18 12:26	
2-Butanone (MEK)	ug/m3	<0.20	3.0	0.20	02/15/18 12:26	
2-Hexanone	ug/m3	<0.61	5.2	0.61	02/15/18 12:26	
2-Propanol	ug/m3	<1.2	2.5	1.2	02/15/18 12:26	
4-Ethyltoluene	ug/m3	<0.21	1.0	0.21	02/15/18 12:26	
4-Methyl-2-pentanone (MIBK)	ug/m3	<0.36	5.2	0.36	02/15/18 12:26	
Acetone	ug/m3	<1.5	2.4	1.5	02/15/18 12:26	
Benzene	ug/m3	<0.016	0.032	0.016	02/15/18 12:26	
Bromodichloromethane	ug/m3	<0.028	0.068	0.028	02/15/18 12:26	
Bromoform	ug/m3	<0.69	5.3	0.69	02/15/18 12:26	
Bromomethane	ug/m3	<0.21	2.0	0.21	02/15/18 12:26	
Carbon disulfide	ug/m3	<0.18	0.63	0.18	02/15/18 12:26	
Carbon tetrachloride	ug/m3	<0.32	0.64	0.32	02/15/18 12:26	
Chlorobenzene	ug/m3	<0.18	0.94	0.18	02/15/18 12:26	
Chloroethane	ug/m3	<0.20	1.3	0.20	02/15/18 12:26	
Chloroform	ug/m3	<0.23	0.50	0.23	02/15/18 12:26	
Chloromethane	ug/m3	<0.13	0.42	0.13	02/15/18 12:26	
cis-1,2-Dichloroethene	ug/m3	<0.014	0.040	0.014	02/15/18 12:26	
cis-1,3-Dichloropropene	ug/m3	0.036J	0.046	0.027	02/15/18 12:26	
Cyclohexane	ug/m3	<0.23	1.7	0.23	02/15/18 12:26	
Dibromochloromethane	ug/m3	0.042J	1.7	0.030	02/15/18 12:26	
Dichlorodifluoromethane	ug/m3	<0.42	1.0	0.42	02/15/18 12:26	
Dichlorotetrafluoroethane	ug/m3	<0.44	1.4	0.44	02/15/18 12:26	
Ethanol	ug/m3	<0.46	0.96	0.46	02/15/18 12:26	
Ethyl acetate	ug/m3	<0.20	0.73	0.20	02/15/18 12:26	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

METHOD BLANK: 2840490 Matrix: Air

Associated Lab Samples: 10420077001, 10420077002, 10420077003, 10420077004, 10420077005, 10420077006, 10420077007, 10420077008, 10420077009, 10420077010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethylbenzene	ug/m3	<0.17	0.88	0.17	02/15/18 12:26	
Hexachloro-1,3-butadiene	ug/m3	<0.87	2.2	0.87	02/15/18 12:26	
Isopropylbenzene (Cumene)	ug/m3	<0.33	2.5	0.33	02/15/18 12:26	
m&p-Xylene	ug/m3	<0.35	4.4	0.35	02/15/18 12:26	
Methyl-tert-butyl ether	ug/m3	<0.67	3.7	0.67	02/15/18 12:26	
Methylene Chloride	ug/m3	<1.5	3.5	1.5	02/15/18 12:26	
n-Heptane	ug/m3	<0.21	0.83	0.21	02/15/18 12:26	
n-Hexane	ug/m3	<0.33	0.72	0.33	02/15/18 12:26	
Naphthalene	ug/m3	<0.60	2.7	0.60	02/15/18 12:26	
o-Xylene	ug/m3	<0.37	2.2	0.37	02/15/18 12:26	
Propylene	ug/m3	<0.16	0.35	0.16	02/15/18 12:26	
Styrene	ug/m3	<0.17	2.2	0.17	02/15/18 12:26	
Tetrachloroethene	ug/m3	0.032J	0.069	0.030	02/15/18 12:26	
Tetrahydrofuran	ug/m3	<0.27	0.60	0.27	02/15/18 12:26	
Toluene	ug/m3	<0.16	0.77	0.16	02/15/18 12:26	
trans-1,2-Dichloroethene	ug/m3	<0.021	0.040	0.021	02/15/18 12:26	
trans-1,3-Dichloropropene	ug/m3	0.041J	0.046	0.028	02/15/18 12:26	
Trichloroethene	ug/m3	<0.031	0.055	0.031	02/15/18 12:26	
Trichlorofluoromethane	ug/m3	<0.42	1.1	0.42	02/15/18 12:26	
Vinyl acetate	ug/m3	<0.17	0.72	0.17	02/15/18 12:26	
Vinyl chloride	ug/m3	<0.026	0.026	0.026	02/15/18 12:26	

LABORATORY CONTROL SAMPLE: 2840491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	.55	0.56	101	56-133	
1,1,2,2-Tetrachloroethane	ug/m3	.7	0.68	98	57-146	
1,1,2-Trichloroethane	ug/m3	.55	0.55	99	54-146	
1,1,2-Trichlorotrifluoroethane	ug/m3	77.9	78.7	101	63-139	
1,1-Dichloroethane	ug/m3	.41	0.42	101	63-130	
1,1-Dichloroethene	ug/m3	.4	0.42	105	59-138	
1,2,4-Trichlorobenzene	ug/m3	75.4	80.4	107	60-133	
1,2,4-Trimethylbenzene	ug/m3	50	61.4	123	70-137	
1,2-Dibromoethane (EDB)	ug/m3	.78	0.80	102	55-148	
1,2-Dichlorobenzene	ug/m3	61.1	68.6	112	70-137	
1,2-Dichloroethane	ug/m3	.41	0.41	101	61-130	
1,2-Dichloropropane	ug/m3	.47	0.49	104	60-140	
1,3,5-Trimethylbenzene	ug/m3	50	58.6	117	70-133	
1,3-Butadiene	ug/m3	.22	0.26	116	65-138	
1,3-Dichlorobenzene	ug/m3	61.1	69.6	114	70-137	
1,4-Dichlorobenzene	ug/m3	61.1	75.1	123	70-134	
2-Butanone (MEK)	ug/m3	30	29.3	98	65-143	
2-Hexanone	ug/m3	104	125	120	60-148	

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QUALITY CONTROL DATA

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

LABORATORY CONTROL SAMPLE: 2840491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Propanol	ug/m3	125	141	113	65-135	
4-Ethyltoluene	ug/m3	50	57.1	114	70-132	
4-Methyl-2-pentanone (MIBK)	ug/m3	104	118	113	70-135	
Acetone	ug/m3	121	134	111	59-132	
Benzene	ug/m3	.32	0.34	104	59-133	
Bromodichloromethane	ug/m3	.68	0.70	102	60-133	
Bromoform	ug/m3	105	132	125	69-150	
Bromomethane	ug/m3	39.5	59.4	150	61-141	CU,L3
Carbon disulfide	ug/m3	31.6	41.1	130	66-134	
Carbon tetrachloride	ug/m3	.64	0.64J	99	56-138	
Chlorobenzene	ug/m3	46.8	57.1	122	70-130	
Chloroethane	ug/m3	26.8	36.0	134	65-143	CU
Chloroform	ug/m3	.5	0.50	102	66-130	
Chloromethane	ug/m3	21	19.5	93	58-140	
cis-1,2-Dichloroethene	ug/m3	.4	0.42	104	65-130	
cis-1,3-Dichloropropene	ug/m3	.46	0.48	103	40-150	
Cyclohexane	ug/m3	35	41.1	117	70-133	
Dibromochloromethane	ug/m3	.87	0.85J	98	46-145	
Dichlorodifluoromethane	ug/m3	50.3	43.5	87	69-130	
Dichlorotetrafluoroethane	ug/m3	71	63.5	89	68-130	
Ethanol	ug/m3	91.6	136	148	65-146	CH,L1
Ethyl acetate	ug/m3	36.6	31.8	87	68-136	
Ethylbenzene	ug/m3	44.1	51.1	116	70-133	
Hexachloro-1,3-butadiene	ug/m3	108	130	120	59-140	
Isopropylbenzene (Cumene)	ug/m3	50	57.6	115	70-133	
m&p-Xylene	ug/m3	88.3	109	123	70-133	
Methyl-tert-butyl ether	ug/m3	91.6	111	121	70-132	
Methylene Chloride	ug/m3	177	206	116	67-132	
n-Heptane	ug/m3	41.6	41.1	99	64-136	
n-Hexane	ug/m3	35.8	34.2	95	70-130	
Naphthalene	ug/m3	53.3	47.0	88	55-136	
o-Xylene	ug/m3	44.1	52.4	119	70-132	
Propylene	ug/m3	17.5	16.0	92	37-150	
Styrene	ug/m3	43.3	56.8	131	70-139	CH
Tetrachloroethene	ug/m3	.69	0.69	100	61-142	
Tetrahydrofuran	ug/m3	30	25.2	84	62-141	
Toluene	ug/m3	38.3	33.7	88	70-130	
trans-1,2-Dichloroethene	ug/m3	.4	0.40	100	67-131	
trans-1,3-Dichloropropene	ug/m3	.46	0.46	100	34-150	
Trichloroethene	ug/m3	.55	0.57	105	58-141	
Trichlorofluoromethane	ug/m3	57.1	65.1	114	59-140	
Vinyl acetate	ug/m3	35.8	41.2	115	57-150	
Vinyl chloride	ug/m3	.26	0.30	115	61-136	

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QUALIFIERS

Project:	Freeman WA Grain Facility
Pace Project No.:	10420077

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

SAMPLE QUALIFIERS

Sample: 10420077001

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Sample: 10420077004

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Sample: 10420077007

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Sample: 10420077010

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

ANALYTE QUALIFIERS

A3 The sample was analyzed by serial dilution.

C0 Result confirmed by second analysis.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

CU The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..

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QUALIFIERS

Project:	Freeman WA Grain Facility
Pace Project No.:	10420077

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman WA Grain Facility
Pace Project No.: 10420077

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10420077001	**SV104A-5'**	TO-15	523234		
10420077002	**SV104A-15'**	TO-15	523234		
10420077003	**SV104B-22'**	TO-15	523234		
10420077004	**SV104B-27'**	TO-15	523234		
10420077005	**SV103A-5'**	TO-15	523234		
10420077006	**SV102A-15'**	TO-15	523234		
10420077007	**SV101B-25'**	TO-15	523234		
10420077008	**SV101A-5'**	TO-15	523234		
10420077009	**SV102A-5'**	TO-15	523234		
10420077010	**DUP-1**	TO-15	523234		

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AIR: CHAIN-OF-CUSTODY /

The Chain-of-Custody is a LEGAL DOCUMENT. All relevan

WO#: 10420077
PM: CB   Due Date: 02/23/18
CLIENT: UPRR_CH2M

31002

Page: 1 of 1

Section A Required Client Information:
Company: CH2M
Address: 999 W. Riverside #500, Spokane, WA 992[illegible]
Email To:
Phone: Fax:
Requested Due Date/TAT: 10 day

Section B Required Project Information:
Report To: Dave Hobson
Copy To: Mark Ochsner, Steve Demus
Purchase Order No.:
Project Name:
Project Number: 661508.10.03

Section C Invoice Information:
Attention:
Company Name: UPRR
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

Program: UST / Superfund / Emissions / Clean Air Act / Voluntary Clean Up / Dry Clean / RCRA / Other

Location of Sampling by State: WA

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level II.___ III.___ IV.___ Other___

Section D Required Client Information — AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)

Valid Media Codes: Tedlar Bag TB; 1 Liter Summa Can 1LC; 6 Liter Summa Can 6LC; Low Volume Puff LVP; High Volume Puff HVP; Other PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	SV104A-5'	6LC	Ø	2/6/18	1051	2/7/18	910	28.5	2.5	2029	1408						X				001
2	SV104A-15'	↓	↓	↓	1115	↓	909	28	2	3314	1407						X				002
3	SV104B-22'				1141		911	29	5	Ø689	1379						X				003
4	SV104B-27'				1200		911	30	4	2106	1444						X				004
5	SV103A-5'				1305		916	28	5	2304	1454						X				005
6	SV102A-15'				1427		918	29	5	ØØ52	1358						X				006
7	SV101B-25'				1612		1122	28	5	Ø838	1039						X				007
8	SV101A-5'				1611		1150	27	5	1203	1500						X				008
9	SV102A-5'				1411		1158	29	16	3320	1417						X				009
10	DUP-1				—		—	28	5	2813	1039						X				010
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / CH2M	2/7/18	1530	[signature] PACE	2-9-18	1015

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
—	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature]   DATE Signed (MM / DD / YY): 2/7/18

ORIGINAL

Air Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: WO# : 10420077

10420077

Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7476 3004 5642, 5620, 5631, 5610, 5653

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): – **Corrected Temp (°C):** – **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** – **Date & Initials of Person Examining Contents:** RG 2/9/18

Type of ice Received ☐ Blue ☐ Wet ☒ None

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.

Samples Received: FFFT, 2-T-Fittings Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
104 A-5			-4	5	Dup-1			-6	"
" A 15			-3	"	~~[illegible]~~				–
" B 22			-5.5	"	unused	2745	0081	-25	–
" B 27			-5	"	"	2748	"	-25	–
103 A-5			-7	"	"	1205	1384	-30	–
102 A-15			-6	"	"	1279	1450	-30	–
101 B-25			-6	"	"	1033	1421	-29	–
" A-5			-7	"	"	2819	1432	-30	–
102A-5			-17	"	"	2295	1278	-28	–

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: Air Sample Condition Upon Receipt	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: F-MN-A-106-rev.14	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name:

Project #: WO# : 10420077

10420077

Courier: ☐ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☐ No **Seals Intact?** ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☐ No

Temp. (TO17 and TO13 samples only) (°C): **Corrected Temp (°C):** **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** **Date & Initials of Person Examining Contents:**

Type of ice Received ☐ Blue ☐ Wet ☐ None

				Comments:
Chain of Custody Present?	☐ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☐ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☐ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☐ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☐ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☐ No	☐ N/A	
Containers Intact?	☐ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	☐ Yes	☐ No	☐ N/A	12.

Samples Received: Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
unused	0664	1368	-30	–					
"	2683	0003	-30	–					
"	0818	~~1278~~	-29	–					
+		1463							
RB 2/6/18									

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Chris Bremer Date: 2/9/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 16, 2018

Reuben Greer
CH2M Hill
717 W. Sprague Avenue
Suite 800
Spokane, WA 99201

RE: Project: 661508.10.02.03 UPRR Freeman-Revised Report
Pace Project No.: 10420794

Dear Reuben Greer:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on February 16, 2018 to change all sample IDs from SV to SB, per client request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 661508.10.02.03 UPRR Freeman-Revised Report
Pace Project No.: 10420794

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10420794001	**SB101B-5-10**	Solid		01/26/18 00:00
10420794002	**SB101B-27-32**	Solid		01/26/18 00:00
10420794003	**SB102B-5-10**	Solid		01/26/18 00:00
10420794004	**SB102B-25-30**	Solid		01/26/18 00:00
10420794005	**SB103B-5-10**	Solid		01/26/18 00:00
10420794006	**SB103B-22-27**	Solid		01/26/18 00:00
10420794007	**SB104B-5-10**	Solid		01/26/18 00:00
10420794008	**SB104B-22-27**	Solid		01/26/18 00:00
10420794009	**SB102-22.5-24.5**	Solid		01/26/18 00:00
10420794010	**SB103B-22-24**	Solid		01/26/18 00:00
10420794011	**SB104B-22-24**	Solid		01/26/18 00:00

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

This data package has been reviewed for quality and completeness and is approved for release.

MATERIAL TESTING REQUEST FORM

PROJECT NAME: UPRR Freeman

PROJECT LOCATION: Freeman, WA

CLIENT: Pace Analytical Services, LLC
ADDRESS: 602 Industry Drive, Bldg 596
CITY: Tukwila STATE: WA ZIP: 98188
PHONE: (206) 957-2426 FAX: Ø

REPORT TO: Steve Demus
ADDRESS: 999 W. Riverside Ave #500
CITY: Spokane STATE: WA ZIP: 99201
PHONE: (509) 944-1785 FAX: (509) 252-1524

SAMPLED BY: Jonathan Espinoza & Jennifer Ulrich DATE RECEIVED: 1/26/18
SOURCE: Soil Borings DATE DUE: ASAP
SAMPLE TYPE: Shelby tube / grab sample MATERIAL: Soil

SAMPLE #	LAB #	TEST(S) REQUESTED	TEST METHOD(S)
SV101B-5-10 SV101B-27-32		Specific Gravity, Sieve Analysis, moisture content	ASTM D854, D422, D2216
SV102B-5-10 SV102B-25-30		↓	ASTM D854, D422, D2216
SV103B-5-10 SV103B-22-27		↓	ASTM D854, D422, D2216
SV104B-5-10 SV104B-22-27		↓	ASTM D854, D422, D2216
SV102-22.5-24.5		Permeability	Flex Wall ASTM D5084
SV103B-22-24		Permeability	Flex Wall ASTM D5084
SV104B-22-24		Permeability	Flex Wall ASTM D5084

RECEIVED BY: KC SAMPLE PREP/PICKUP TIME:
PROJECT NUMBER: 661508.10.02.03 PROJECT TYPE:
DATE COMPLETED: L1800Z DATE FAXED:
DATE REPORTED: REPORTED TO:

SAMPLE RECEIVED FROM: Jonathan Espinoza (734) 363-4587
Print name & phone

SAMPLE RECEIVED FROM: [signature]
Signature

budinger & associates, inc.
geotechnical & material engineers

Jennifer Gross
Pace Analytical Services, LLC
602 Industry Drive, Bldg. 596
Tukwila, WA 98188

February 15, 2018

Project Number L18002

PROJECT: **UPRR Freeman**
Spokane, WA

SUBJECT: **Results of Laboratory Testing**
Report #1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period, our involvement was limited to laboratory testing of eleven samples delivered to our laboratory on January 26, 2018. Laboratory tests were performed in general accordance with methods listed on the attached *Laboratory Summary* and *Particle Size Distribution* sheets.

If you have questions regarding this report, please call.

Respectfully Submitted,
Budinger & Associates, Inc.

Terri Ballard

Terri Ballard
Laboratory Manager

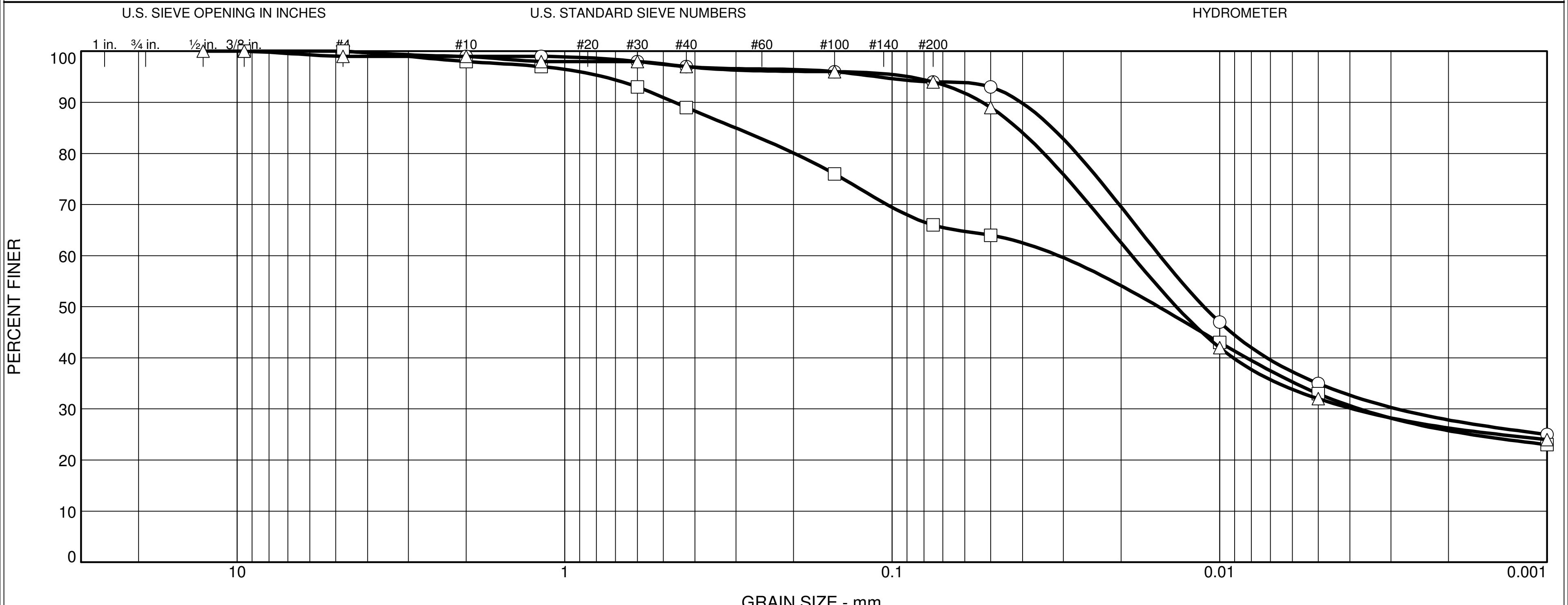
TBB/kh/Addressee -2
Jennifer Gross – Jennifer.gross@pacelabs.com
Reuben Greer – rgreer@ch2m.com
Steve Demus - Steve.Demus@CH2M.com

Attachments:
Soil Mechanics Laboratory Summary – (1 page)
Particle Size Distribution Report – (3 pages)
Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter – (3 pages)

SOIL MECHANICS
LABORATORY SUMMARY

		Units	Test Method											
LABORATORY NUMBER				18-0012	18-0013	18-0014	18-0015	18-0016	18-0017	18-0018	18-0019	18-0020	18-0021	18-0022
SAMPLED BY				Client	Client	Client	Client	Client	Client	Client	Client	Client	Client	Client
SAMPLE TYPE				Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk
DATE RECEIVED				1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18	1/26/18
FIELD SAMPLE IDENTIFICATION				SB101B	SB101B	SB102B	SB102B	SB103B	SB103B	SB104B	SB104B	SB102	SB103B	SB104B
DEPTH	TOP	feet		5	27	5	25	5	22	5	22	22.5	22	22
	BOTTOM	feet		10	32	10	30	10	27	10	27	24.5	24	24
MOISTURE CONTENT		%	ASTM D2216	19.8	43.7	22.0	53.3	19.2	59.9	19.8	56.6			
FLEX WALL PERMEABILITY		cm/sec	ASTM D5084	-	-	-	-	-	-	-	-	9.9×10^{-6}	3.9×10^{-5}	5.2×10^{-5}
SPECIFIC GRAVITY OF SOILS			ASTM D854	2.593	3.146	2.662	3.042	2.653	3.075	2.641	3.000			
SIEVE ANALYSIS			ASTM D422											
	1"								100					
S	3/4"	%							98	100				
I	1/2"					100			98	99				
E	3/8"	P			100	100-		100	97	98	100			
V	#4	A		100	100-	99	100	100-	95	96	99			
E	#10	S		99	98	99	100-	98	92	94	95			
	#16	S		99	97	98	99	98	90	93	92			
S	#30	I		98	93	98	96	98	87	92	87			
I	#40	N		97	89	97	93	97	84	91	84			
Z	#100	G		96	76	96	82	95	76	90	75			
E	#200			94	66	94	74	93	69	88	66			
	0.05mm			93	64	89	70	85	65	79	63			
	0.01mm			47	43	42	48	45	45	44	38			
	0.005mm			35	33	32	38	34	33	35	29			
	0.001mm			25	23	24	24	24	22	28	18			

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	2	3	59	35
□	0	0	2	9	23	33	33
△	0	1	0	2	3	62	32

	Identification	Date Sampled	Date Received	Date Tested
○	Source of Sample: on site Sample Number: 18-0012		1/26/18	2/1/18
□	Source of Sample: on site Sample Number: 18-0013		1/26/18	2/1/18
△	Source of Sample: on site Sample Number: 18-0014		1/26/18	2/1/18

Client Pace Analytical

Project UPRR Freeman

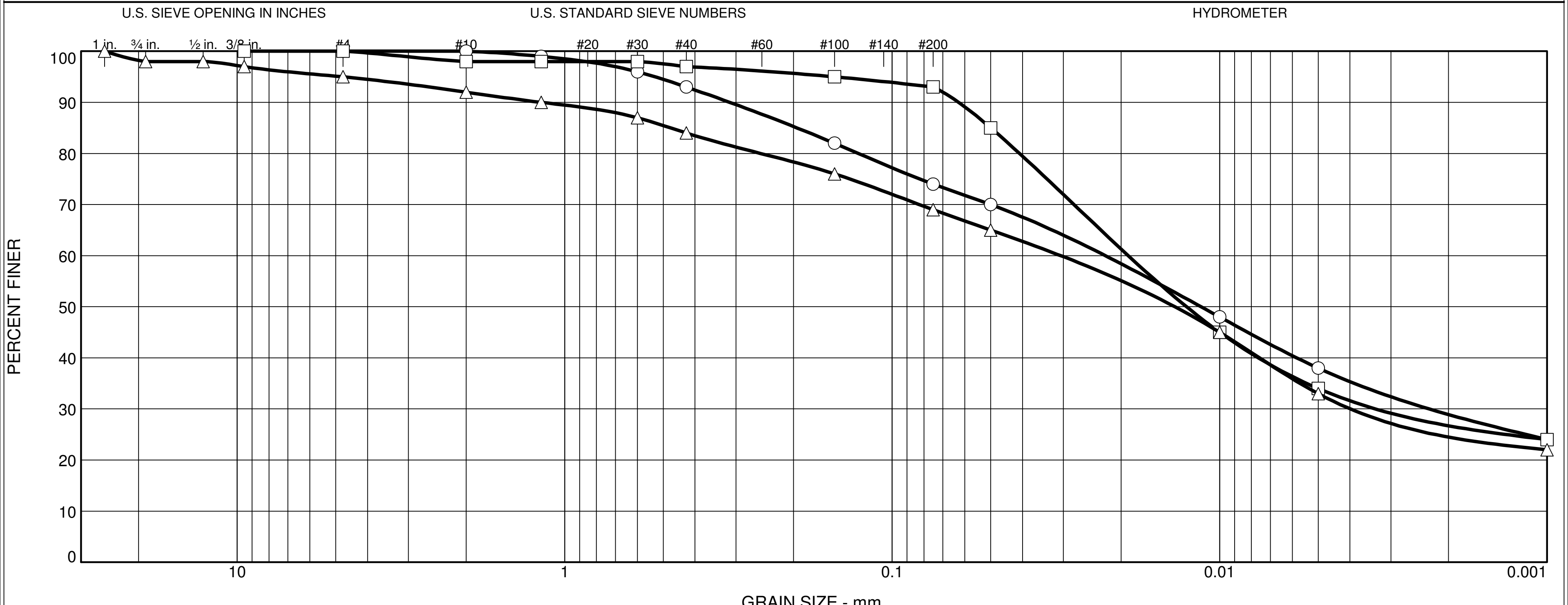
Project No. L18002 Date 2/12/18

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from SB101B @ 5-10'
□ Sampled by Client from SB101B @ 27-32'
△ Sampled by Client from SB102B @ 5-10'

Tested By: KC **Checked By:** TB

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	7	19	36	38
□	0	0	2	1	4	59	34
△	2	3	3	8	15	36	33

	Identification		Date Sampled	Date Received	Date Tested
○	Source of Sample: on site	Sample Number: 18-0015		1/26/18	2/1/18
□	Source of Sample: on site	Sample Number: 18-0016		1/26/18	2/1/18
△	Source of Sample: on site	Sample Number: 18-0017		1/26/18	2/1/18

Client Pace Analytical

Project
UPRR Freeman

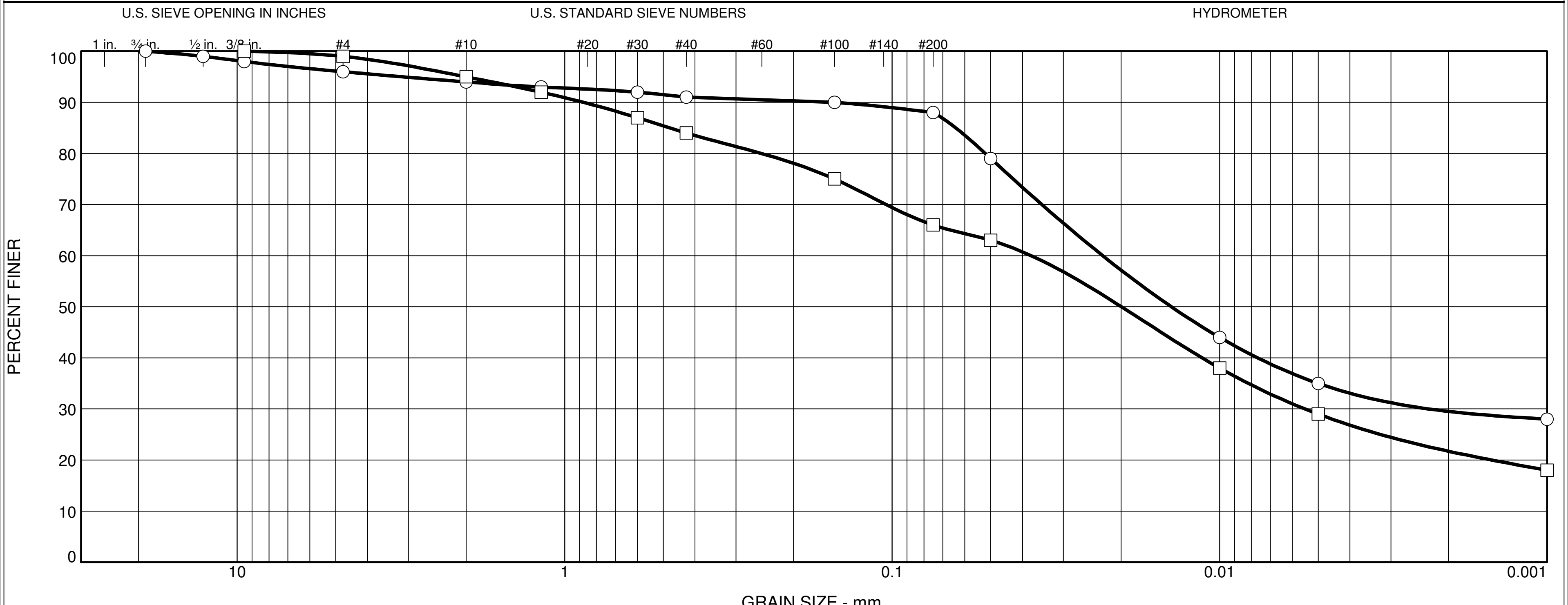
Project No. L18002 Date 2/12/18

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from SB102B @ 25-30'
□ Sampled by Client from SB103B @ 5-10'
△ Sampled by Client from SB103B @ 22-27'

Tested By: KC **Checked By:** TB

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	2	3	3	53	35
□	0	1	4	11	18	37	29

	Identification	Date Sampled	Date Received	Date Tested
○	Source of Sample: on site Sample Number: 18-0018		2/16/18	2/1/18
□	Source of Sample: on site Sample Number: 19-0019		1/26/18	2/1/18

Client Pace Analytical

Project UPRR Freeman

Project No. L18002 Date 2/12/18

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from SB104B @ 5-10'

□ Sampled by Client from SB104B @ 22-27'

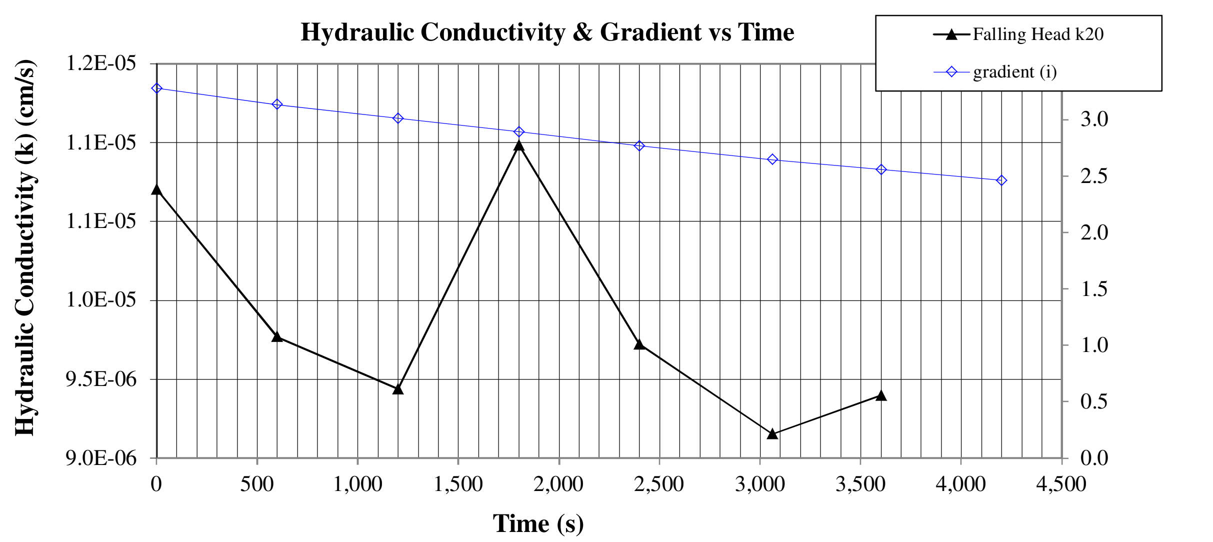
Tested By: KC **Checked By:** TB

Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
ASTM D 5084
Test Results

Project No.:	L18002	Project Location:	UPRR Freeman		Remolded
Sample ID:	SB102	Sample Description:	Brown cleyey sand		X Undisturbed
Tested By:	DVK	Initial Dry Density:	71.4 pcf		
Sampled By:	Client	Initial/Final Moisture Content:	53.4% / 59.9%		
Laboratory No:	18-0020	Date Tested:	2/1/18	$a_{\text{influent burrett}}$	0.906 cm^2

Register 1	Chamber	38.0 (psi)	$a_{\text{effluent burrett}}$	0.906 cm^2
Register 3	Upper	36.0 (psi)	Length, L_f	12.433 cm
Register 2	Lower	36.2 (psi)	Area, A_f	41.999 cm^2

Date	Time (s)	Lower (Red) Pore Pressure (psi)	Upper (Black) Pore Pressure (psi)	Temperature °C	Temperature R_T	Burette Readings Upper V_U (t) (cc)	Burette Readings Lower V_L (t) (cc)	Incremental Flow Inflow (lower) (cc)	Incremental Flow Outflow (upper) (cc)	Incremental Flow Ratio In/Out	Head Difference h (t) (cm)	Gradient	Constant Head k_{20} (cm/sec)	**Falling Head k_{20} (cm/sec)**
2/1/2018	0	37.70	37.20	21.0	0.980	24.50	0.30				40.8	3.3		
Run 1	600	37.70	37.20	21.0	0.980	23.65	1.05	0.75	0.85	0.9	39.0	3.1	9.7E-06	**1.1E-05**
	1200	37.70	37.20	21.0	0.980	23.00	1.80	0.75	0.65	1.2	37.5	3.0	8.9E-06	**9.8E-06**
	1800	37.70	37.30	21.0	0.980	22.30	2.40	0.60	0.70	0.9	36.0	2.9	8.6E-06	**9.4E-06**
	2400	37.60	37.30	21.0	0.980	21.60	3.15	0.75	0.70	1.1	34.4	2.8	9.9E-06	**1.1E-05**
	3060	37.60	37.30	21.0	0.980	20.90	3.80	0.65	0.70	0.9	32.9	2.7	8.8E-06	**9.7E-06**
	3600	37.60	37.30	21.0	0.980	20.40	4.30	0.50	0.50	1.0	31.8	2.6	8.3E-06	**9.2E-06**
	4200	37.60	37.30	21.0	0.980	19.85	4.85	0.55	0.55	1.0	30.6	2.5	8.5E-06	**9.4E-06**
												k_{20}=	9.0E-06 cm/s	**9.9E-06 cm/s**



Permeant liquid: standard water

Calculations meeting ASTM D 5084:

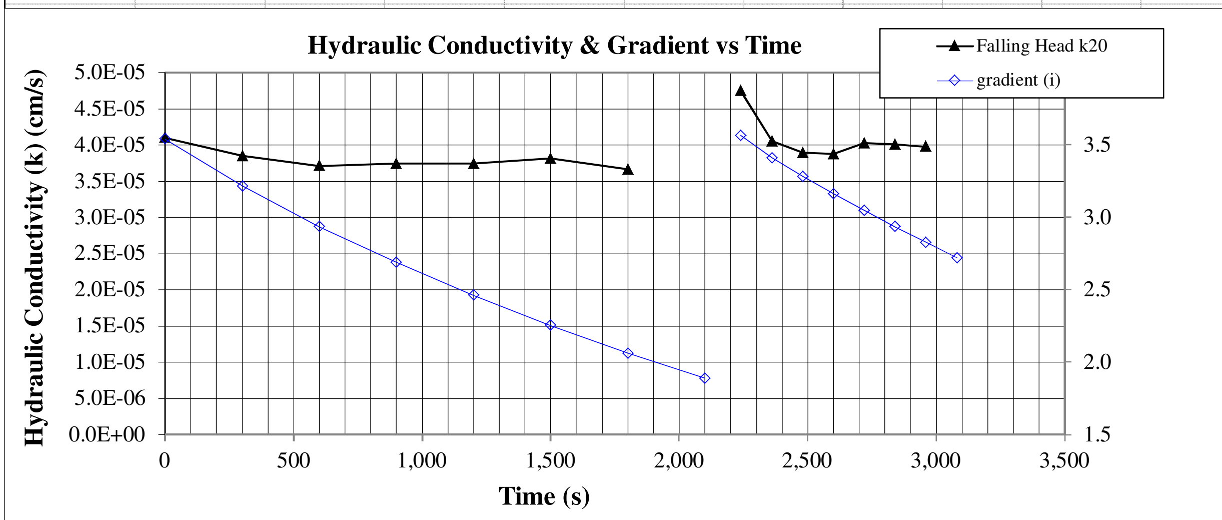
Constant Head Method A	
Falling HeadMethod B	
Falling HeadMethod C	X
Constant Rate of Flow Method D	
Constant Head Method E	
Falling HeadMethod F	

Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
ASTM D 5084
Test Results

Project No.:	L18002	Project Location:	UPRR Freeman	Remolded
Sample ID:	SB103B	Sample Description:	Brown cleyey sand w/ gravel	X Undisturbed
Tested By:	DVK	Initial Dry Density:	94.6 pcf	
Sampled By:	Client	Initial/Final Moisture Content:	32.9% / 38.2%	
Laboratory No:	18-0021	Date Tested:	2/6/18	

Register 1 Chamber	38.0 (psi)		$a_{\text{influent burrett}}$	0.981 cm^2
Register 3 Upper	36.1 (psi)		$a_{\text{effluent burrett}}$	0.981 cm^2
Register 2 Lower	36.3 (psi)		Length, L_f	10.759 cm
			Area, A_f	41.418 cm^2

Date	Time (s)	Lower (Red) Pore Pressure (psi)	Upper (Black) Pore Pressure (psi)	Temperature °C	Temperature R_T	Burette Readings Upper V_U(t) (cc)	Burette Readings Lower V_L(t) (cc)	Incremental Flow Inflow (lower) (cc)	Incremental Flow Outflow (upper) (cc)	Incremental Flow Ratio In/Out	Head Difference h (t) (cm)	Gradient	Constant Head k_{20} (cm/sec)	**Falling Head k_{20} (cm/sec)**
2/6/2018	0	37.20	36.70	21.0	0.980	23.90	0.30				38.1	3.5		
Run 1	300	37.20	36.70	21.0	0.980	22.15	2.00	1.70	1.75	1.0	34.6	3.2	4.0E-05	**4.1E-05**
	600	37.20	36.70	21.0	0.980	20.70	3.50	1.50	1.45	1.0	31.6	2.9	3.8E-05	**3.9E-05**
	900	37.10	36.80	21.0	0.980	19.40	4.80	1.30	1.30	1.0	29.0	2.7	3.6E-05	**3.7E-05**
	1200	37.10	36.80	21.0	0.980	18.20	6.00	1.20	1.20	1.0	26.5	2.5	3.7E-05	**3.7E-05**
	1500	37.10	36.80	21.0	0.980	17.10	7.10	1.10	1.10	1.0	24.3	2.3	3.7E-05	**3.8E-05**
	1800	37.10	36.80	21.0	0.980	16.05	8.10	1.00	1.05	1.0	22.2	2.1	3.7E-05	**3.8E-05**
	2100	37.10	36.80	21.0	0.980	15.15	9.00	0.90	0.90	1.0	20.3	1.9	3.6E-05	**3.7E-05**
2/6/2018	3240	37.20	36.70	21.0	0.980	24.00	0.15				38.4	3.6		
Run 2	3360	37.20	36.70	21.0	0.980	23.10	0.90	0.75	0.90	0.8	36.7	3.4	4.7E-05	**4.8E-05**
	3480	37.20	36.70	21.0	0.980	22.45	1.60	0.70	0.65	1.1	35.3	3.3	4.0E-05	**4.1E-05**
	3600	37.20	36.70	21.0	0.980	21.80	2.20	0.60	0.65	0.9	34.1	3.2	3.8E-05	**3.9E-05**
	3720	37.20	36.70	21.0	0.980	21.20	2.80	0.60	0.60	1.0	32.8	3.1	3.8E-05	**3.9E-05**
	3840	37.20	36.70	21.0	0.980	20.60	3.40	0.60	0.60	1.0	31.6	2.9	4.0E-05	**4.0E-05**
	3960	37.20	36.70	21.0	0.980	20.05	4.00	0.60	0.60	1.0	30.4	2.8	4.1E-05	**4.0E-05**
	4080	37.10	36.80	21.0	0.980	19.50	4.55	0.60	0.55	1.1	29.3	2.7	4.1E-05	**4.0E-05**
												k_{20}=	3.9E-05 cm/s	**3.9E-05 cm/s**



Permeant liquid: standard water

Calculations meeting ASTM D 5084:

Constant Head Method A	
Falling HeadMethod B	
Falling HeadMethod C	X
Constant Rate of Flow Method D	
Constant Head Method E	
Falling HeadMethod F	

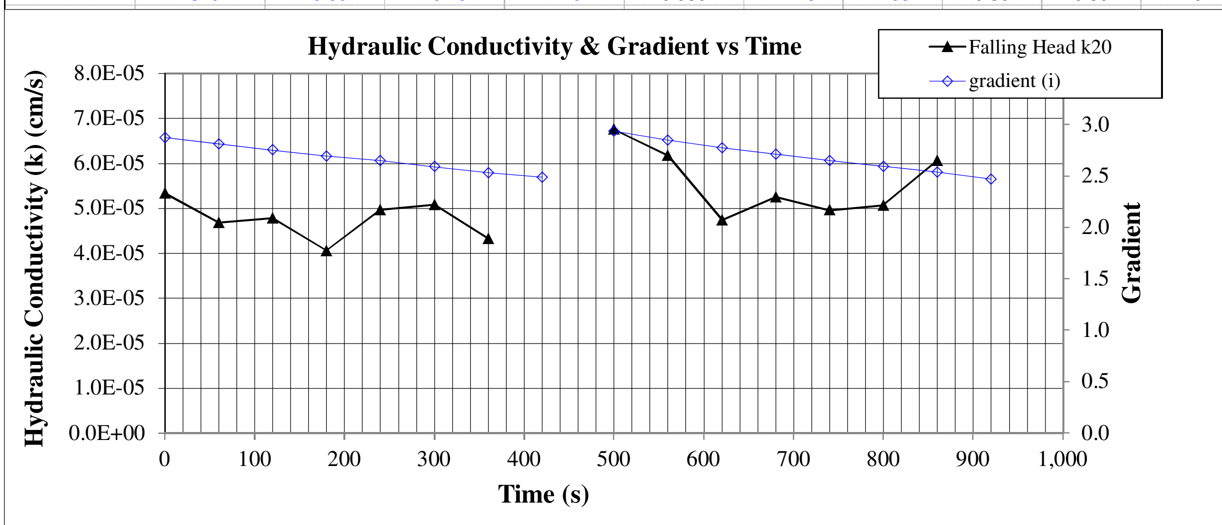
Budinger & Associates, Inc.
Geotechnical & Environmental Engineers
Construction Materials Testing & Special Inspection

Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
ASTM D 5084
Test Results

Project No.:	L18002	Project Location:	UPRR Freeman		Remolded
Sample ID:	SB104B	Sample Description:	Brown silty sand		X Undisturbed
Tested By:	DVK	Initial Dry Density:	68.1 pcf		
Sampled By:	Client	Initial/Final Moisture Content:	62.3%		
Laboratory No:	18-0022	Date Tested:	2/8/18	$a_{\text{influent burrett}}$	0.906 cm^2

Register 1 Chamber	42.0 (psi)		$a_{\text{effluent burrett}}$	0.906 cm^2
Register 3 Upper	39.1 (psi)		Length, L_f	11.585 cm
Register 2 Lower	39.2 (psi)		Area, A_f	41.506 cm^2

Date	Time (s)	Lower (Red) Pore Pressure (psi)	Upper (Black) Pore Pressure (psi)	Temperature °C	Temperature R_T	Burette Readings Upper V_U (t) (cc)	Burette Readings Lower V_L (t) (cc)	Incremental Flow Inflow (lower) (cc)	Incremental Flow Outflow (upper) (cc)	Incremental Flow Ratio In/Out	Head Difference h (t) (cm)	Gradient	Constant Head k_{20} (cm/sec)	**Falling Head k_{20} (cm/sec)**
2/8/2018	0	40.60	40.10	21.0	0.980	24.35	0.50				33.4	2.9		
Run 1	60	40.60	40.10	21.0	0.980	24.00	0.85	0.35	0.35	1.0	32.6	2.8	4.8E-05	**5.3E-05**
	120	40.60	40.10	21.0	0.980	23.70	1.15	0.30	0.30	1.0	31.9	2.8	4.2E-05	**4.7E-05**
	180	40.60	40.10	21.0	0.980	23.40	1.45	0.30	0.30	1.0	31.3	2.7	4.3E-05	**4.8E-05**
	240	40.60	40.20	21.0	0.980	23.15	1.70	0.25	0.25	1.0	30.7	2.7	3.7E-05	**4.1E-05**
	300	40.60	40.20	21.0	0.980	22.85	2.00	0.30	0.30	1.0	30.1	2.6	4.5E-05	**5.0E-05**
	360	40.60	40.20	21.0	0.980	22.50	2.25	0.25	0.35	0.7	29.4	2.5	4.6E-05	**5.1E-05**
	420	40.60	40.20	21.0	0.980	22.25	2.50	0.25	0.25	1.0	28.8	2.5	3.9E-05	**4.3E-05**
5/12/2017	900	40.70	40.10	21.0	0.980	24.75	0.30				34.0	2.9		
Run 2	960	40.70	40.10	21.0	0.980	24.25	0.70	0.40	0.50	0.8	33.0	2.9	6.1E-05	**6.8E-05**
	1020	40.70	40.10	21.0	0.980	23.85	1.10	0.40	0.40	1.0	32.1	2.8	5.6E-05	**6.2E-05**
	1080	40.70	40.20	21.0	0.980	23.55	1.40	0.30	0.30	1.0	31.5	2.7	4.3E-05	**4.7E-05**
	1140	40.70	40.20	21.0	0.980	23.20	1.70	0.30	0.35	0.9	30.8	2.7	4.8E-05	**5.3E-05**
	1200	40.70	40.20	21.0	0.980	22.90	2.00	0.30	0.35	0.9	30.1	2.6	4.9E-05	**5.0E-05**
	1260	40.60	40.20	21.0	0.980	22.60	2.30	0.30	0.30	1.0	29.4	2.5	4.6E-05	**5.1E-05**
	1320	40.60	40.20	21.0	0.980	22.25	2.65	0.30	0.30	1.0	28.7	2.5	4.7E-05	**6.1E-05**
												k_{20}=	4.6E-05 cm/s	**5.2E-05 cm/s**



Permeant liquid: standard water

Calculations meeting ASTM D 5084:

Constant Head Method A	
Falling HeadMethod B	
Falling HeadMethod C	X
Constant Rate of Flow Method D	
Constant Head Method E	
Falling HeadMethod F	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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February 26, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on February 16, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10420998

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10420998001	**Freeman-WR15469**	Water	02/14/18 03:20	02/16/18 09:45

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SAMPLE ANALYTE COUNT

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10420998001	**Freeman-WR15469**	EPA 6010C	DM	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10420998001	**Freeman-WR15469**					
EPA 6010C	Barium	12.6	ug/L	10.0	02/23/18 09:41	
EPA 6010C	Copper	5.1J	ug/L	10.0	02/23/18 09:41	
EPA 6010C	Zinc	145	ug/L	20.0	02/23/18 09:41	

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: UPRR_CH2M Hill/Jacobs
Date: February 26, 2018

General Information:
1 sample was analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Method: **EPA 7470A**
Description: 7470A Mercury
Client: UPRR_CH2M Hill/Jacobs
Date: February 26, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M Hill/Jacobs
Date: February 26, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 524068

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10421484001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2845806)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 2845807)
  - Acetone
  - Tetrahydrofuran

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Sample: Freeman-WR15469 **Lab ID: 10420998001** Collected: 02/14/18 03:20 Received: 02/16/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
Arsenic	**<5.2**	ug/L	20.0	5.2	1	02/22/18 11:46	02/23/18 09:41	7440-38-2	
Barium	**12.6**	ug/L	10.0	0.22	1	02/22/18 11:46	02/23/18 09:41	7440-39-3	
Cadmium	**<0.46**	ug/L	3.0	0.46	1	02/22/18 11:46	02/23/18 09:41	7440-43-9	
Chromium	**<0.50**	ug/L	10.0	0.50	1	02/22/18 11:46	02/23/18 09:41	7440-47-3	
Copper	**5.1J**	ug/L	10.0	0.83	1	02/22/18 11:46	02/23/18 09:41	7440-50-8	
Lead	**<3.0**	ug/L	10.0	3.0	1	02/22/18 11:46	02/23/18 09:41	7439-92-1	
Selenium	**<6.4**	ug/L	20.0	6.4	1	02/22/18 11:46	02/23/18 09:41	7782-49-2	
Silver	**<0.27**	ug/L	10.0	0.27	1	02/22/18 11:46	02/23/18 09:41	7440-22-4	
Zinc	**145**	ug/L	20.0	1.8	1	02/22/18 11:46	02/23/18 09:41	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.062**	ug/L	0.20	0.062	1	02/21/18 12:29	02/23/18 15:31	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		02/21/18 20:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		02/21/18 20:42	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		02/21/18 20:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		02/21/18 20:42	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		02/21/18 20:42	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		02/21/18 20:42	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		02/21/18 20:42	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		02/21/18 20:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		02/21/18 20:42	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		02/21/18 20:42	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		02/21/18 20:42	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		02/21/18 20:42	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		02/21/18 20:42	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		02/21/18 20:42	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		02/21/18 20:42	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		02/21/18 20:42	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		02/21/18 20:42	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		02/21/18 20:42	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		02/21/18 20:42	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		02/21/18 20:42	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		02/21/18 20:42	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		02/21/18 20:42	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		02/21/18 20:42	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		02/21/18 20:42	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		02/21/18 20:42	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		02/21/18 20:42	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		02/21/18 20:42	107-02-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Sample: Freeman-WR15469 **Lab ID: 10420998001** Collected: 02/14/18 03:20 Received: 02/16/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		02/21/18 20:42	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		02/21/18 20:42	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		02/21/18 20:42	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		02/21/18 20:42	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		02/21/18 20:42	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		02/21/18 20:42	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		02/21/18 20:42	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		02/21/18 20:42	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		02/21/18 20:42	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		02/21/18 20:42	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		02/21/18 20:42	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		02/21/18 20:42	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		02/21/18 20:42	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		02/21/18 20:42	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		02/21/18 20:42	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		02/21/18 20:42	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		02/21/18 20:42	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		02/21/18 20:42	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		02/21/18 20:42	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		02/21/18 20:42	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		02/21/18 20:42	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		02/21/18 20:42	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		02/21/18 20:42	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		02/21/18 20:42	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		02/21/18 20:42	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		02/21/18 20:42	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		02/21/18 20:42	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		02/21/18 20:42	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		02/21/18 20:42	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		02/21/18 20:42	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		02/21/18 20:42	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		02/21/18 20:42	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		02/21/18 20:42	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		02/21/18 20:42	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		02/21/18 20:42	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		02/21/18 20:42	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		02/21/18 20:42	156-60-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease

Pace Project No.: 10420998

Sample: Freeman-WR15469 **Lab ID: 10420998001** Collected: 02/14/18 03:20 Received: 02/16/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		02/21/18 20:42	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		02/21/18 20:42	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	89	%.	75-125		1		02/21/18 20:42	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1		02/21/18 20:42	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		02/21/18 20:42	460-00-4	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

QC Batch: 524040 — Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A — Analysis Description: 7470A Mercury Water
Associated Lab Samples: 10420998001

METHOD BLANK: 2844389 — Matrix: Water
Associated Lab Samples: 10420998001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.062	0.20	0.062	02/23/18 15:18	

LABORATORY CONTROL SAMPLE: 2844390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2844391 2844392

Parameter	Units	10420470002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.062	5	5	4.7	4.7	94	93	80-120	0	20	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

QC Batch: 524232 Analysis Method: EPA 6010C
QC Batch Method: EPA 3010 Analysis Description: 6010C Water
Associated Lab Samples: 10420998001

METHOD BLANK: 2845324 Matrix: Water
Associated Lab Samples: 10420998001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<5.2	20.0	5.2	02/23/18 09:33	
Barium	ug/L	<0.22	10.0	0.22	02/23/18 09:33	
Cadmium	ug/L	<0.46	3.0	0.46	02/23/18 09:33	
Chromium	ug/L	<0.50	10.0	0.50	02/23/18 09:33	
Copper	ug/L	<0.83	10.0	0.83	02/23/18 09:33	
Lead	ug/L	<3.0	10.0	3.0	02/23/18 09:33	
Selenium	ug/L	<6.4	20.0	6.4	02/23/18 09:33	
Silver	ug/L	<0.27	10.0	0.27	02/23/18 09:33	
Zinc	ug/L	<1.8	20.0	1.8	02/23/18 09:33	

LABORATORY CONTROL SAMPLE: 2845325

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	1060	106	80-120	
Barium	ug/L	1000	1060	106	80-120	
Cadmium	ug/L	1000	1060	106	80-120	
Chromium	ug/L	1000	1040	104	80-120	
Copper	ug/L	1000	1030	103	80-120	
Lead	ug/L	1000	1070	107	80-120	
Selenium	ug/L	1000	1150	115	80-120	
Silver	ug/L	500	516	103	80-120	
Zinc	ug/L	1000	1080	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845326 2845327

Parameter	Units	10420998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	<5.2	1000	1000	1100	1090	110	109	75-125	1	20	
Barium	ug/L	12.6	1000	1000	1100	1080	108	107	75-125	1	20	
Cadmium	ug/L	<0.46	1000	1000	1090	1080	109	108	75-125	1	20	
Chromium	ug/L	<0.50	1000	1000	1070	1060	107	106	75-125	1	20	
Copper	ug/L	5.1J	1000	1000	1070	1060	106	105	75-125	1	20	
Lead	ug/L	<3.0	1000	1000	1090	1080	109	108	75-125	1	20	
Selenium	ug/L	<6.4	1000	1000	1160	1150	116	115	75-125	1	20	
Silver	ug/L	<0.27	500	500	533	527	106	105	75-125	1	20	
Zinc	ug/L	145	1000	1000	1220	1220	108	108	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

QC Batch: 524068 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10420998001

METHOD BLANK: 2844475 | Matrix: Water
Associated Lab Samples: 10420998001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	02/21/18 13:10	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	02/21/18 13:10	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	02/21/18 13:10	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	02/21/18 13:10	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	02/21/18 13:10	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	02/21/18 13:10	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	02/21/18 13:10	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	02/21/18 13:10	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	02/21/18 13:10	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	02/21/18 13:10	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	02/21/18 13:10	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	02/21/18 13:10	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	02/21/18 13:10	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	02/21/18 13:10	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	02/21/18 13:10	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	02/21/18 13:10	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	02/21/18 13:10	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	02/21/18 13:10	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	02/21/18 13:10	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	02/21/18 13:10	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	02/21/18 13:10	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	02/21/18 13:10	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	02/21/18 13:10	
2-Hexanone	ug/L	<2.5	5.0	2.5	02/21/18 13:10	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	02/21/18 13:10	
Acetone	ug/L	<8.8	20.0	8.8	02/21/18 13:10	
Acrolein	ug/L	<4.8	10.0	4.8	02/21/18 13:10	
Acrylonitrile	ug/L	<4.9	10.0	4.9	02/21/18 13:10	
Benzene	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
Bromobenzene	ug/L	<0.16	0.50	0.16	02/21/18 13:10	
Bromochloromethane	ug/L	<0.38	1.0	0.38	02/21/18 13:10	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	02/21/18 13:10	
Bromoform	ug/L	<1.0	4.0	1.0	02/21/18 13:10	
Bromomethane	ug/L	<1.5	4.0	1.5	02/21/18 13:10	
Carbon disulfide	ug/L	<0.37	1.0	0.37	02/21/18 13:10	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	02/21/18 13:10	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

METHOD BLANK: 2844475 Matrix: Water
Associated Lab Samples: 10420998001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
Chloroethane	ug/L	<0.44	1.0	0.44	02/21/18 13:10	
Chloroform	ug/L	<0.46	1.0	0.46	02/21/18 13:10	
Chloromethane	ug/L	<1.1	4.0	1.1	02/21/18 13:10	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	02/21/18 13:10	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	02/21/18 13:10	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
Dibromomethane	ug/L	<0.50	1.0	0.50	02/21/18 13:10	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	02/21/18 13:10	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	02/21/18 13:10	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	02/21/18 13:10	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
Ethylbenzene	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	02/21/18 13:10	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
m&p-Xylene	ug/L	<0.24	1.0	0.24	02/21/18 13:10	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
Methylene Chloride	ug/L	<1.2	4.0	1.2	02/21/18 13:10	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	02/21/18 13:10	
Naphthalene	ug/L	<0.42	1.0	0.42	02/21/18 13:10	
o-Xylene	ug/L	<0.11	0.50	0.11	02/21/18 13:10	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	02/21/18 13:10	
Styrene	ug/L	<0.14	0.50	0.14	02/21/18 13:10	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	02/21/18 13:10	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	02/21/18 13:10	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	02/21/18 13:10	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	02/21/18 13:10	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	02/21/18 13:10	
Toluene	ug/L	<0.17	0.50	0.17	02/21/18 13:10	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	02/21/18 13:10	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	02/21/18 13:10	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	02/21/18 13:10	
Trichloroethene	ug/L	<0.18	0.40	0.18	02/21/18 13:10	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	02/21/18 13:10	
Vinyl acetate	ug/L	<1.5	10.0	1.5	02/21/18 13:10	
Vinyl chloride	ug/L	<0.096	0.20	0.096	02/21/18 13:10	
Xylene (Total)	ug/L	<0.24	1.5	0.24	02/21/18 13:10	
1,2-Dichloroethane-d4 (S)	%.	88	75-125		02/21/18 13:10	
4-Bromofluorobenzene (S)	%.	93	75-125		02/21/18 13:10	
Toluene-d8 (S)	%.	95	75-125		02/21/18 13:10	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

LABORATORY CONTROL SAMPLE: 2844476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.8	109	75-125	
1,1,1-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.4	97	75-125	
1,1,2-Trichloroethane	ug/L	20	21.9	109	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.2	101	72-125	
1,1-Dichloroethane	ug/L	20	19.6	98	75-125	
1,1-Dichloroethene	ug/L	20	18.6	93	73-125	
1,1-Dichloropropene	ug/L	20	18.9	95	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.5	97	72-130	
1,2,3-Trichloropropane	ug/L	20	20.7	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.2	96	75-125	
1,2,4-Trimethylbenzene	ug/L	20	18.9	94	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	20.7	104	75-125	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.7	97	75-125	
1,2-Dichloropropane	ug/L	20	19.0	95	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.1	95	75-125	
1,3-Dichlorobenzene	ug/L	20	20.2	101	75-125	
1,3-Dichloropropane	ug/L	20	19.9	100	75-125	
1,4-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	427	107	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.1	95	64-130	
2,2-Dichloropropane	ug/L	20	21.8	109	68-129	
2-Butanone (MEK)	ug/L	100	90.9	91	65-126	
2-Chlorotoluene	ug/L	20	18.3	91	75-125	
2-Hexanone	ug/L	100	99.7	100	75-134	
4-Chlorotoluene	ug/L	20	19.3	97	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.7	100	75-131	
Acetone	ug/L	100	112	112	68-150	
Acrolein	ug/L	200	196	98	63-149	
Acrylonitrile	ug/L	200	193	96	75-125	
Benzene	ug/L	20	19.3	96	75-125	
Bromobenzene	ug/L	20	19.7	99	75-125	
Bromochloromethane	ug/L	20	21.5	107	75-125	
Bromodichloromethane	ug/L	20	21.3	106	75-125	
Bromoform	ug/L	20	21.2	106	70-125	
Bromomethane	ug/L	20	23.2	116	30-145	
Carbon disulfide	ug/L	20	17.2	86	67-125	
Carbon tetrachloride	ug/L	20	20.6	103	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	20.9	104	73-131	
Chloroform	ug/L	20	19.4	97	75-125	
Chloromethane	ug/L	20	19.6	98	52-132	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	22.5	113	75-125	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

LABORATORY CONTROL SAMPLE: 2844476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	23.3	117	75-125	
Dibromomethane	ug/L	20	22.9	115	75-125	
Dichlorodifluoromethane	ug/L	20	20.4	102	64-127	
Dichlorofluoromethane	ug/L	20	20.3	102	75-125	
Diisopropyl ether	ug/L	20	18.5	93	75-125	
Ethyl-tert-butyl ether	ug/L	20	18.8	94	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.6	98	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.0	100	75-125	
m&p-Xylene	ug/L	40	40.9	102	75-125	
Methyl-tert-butyl ether	ug/L	20	18.9	95	75-125	
Methylene Chloride	ug/L	20	19.6	98	72-125	
n-Butylbenzene	ug/L	20	18.3	92	75-125	
n-Propylbenzene	ug/L	20	18.6	93	75-125	
Naphthalene	ug/L	20	15.8	79	61-136	
o-Xylene	ug/L	20	18.9	95	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	18.1	90	75-125	
Styrene	ug/L	20	21.4	107	75-125	
tert-Amylmethyl ether	ug/L	20	19.1	95	75-125	
tert-Butyl Alcohol	ug/L	200	202	101	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.8	99	75-125	
Tetrahydrofuran	ug/L	200	231	116	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	47.6	95	57-126	
Trichloroethene	ug/L	20	21.6	108	75-125	
Trichlorofluoromethane	ug/L	20	21.0	105	74-126	
Vinyl acetate	ug/L	20	20.7	104	72-129	
Vinyl chloride	ug/L	20	20.0	100	71-130	
Xylene (Total)	ug/L	60	59.8	100	75-125	
1,2-Dichloroethane-d4 (S)	%.			89	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845806 2845807

Parameter	Units	10421484001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	22.7	22.3	114	112	75-125	2	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.7	23.8	114	119	75-129	5	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	21.0	19.9	105	100	75-125	5	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	23.1	22.8	115	114	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845806 2845807

Parameter	Units	10421484001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	23.5	24.0	118	120	75-136	2	30	
1,1-Dichloroethane	ug/L	ND	20	20	20.3	21.8	101	109	75-125	7	30	
1,1-Dichloroethene	ug/L	ND	20	20	20.9	22.5	104	112	75-127	7	30	
1,1-Dichloropropene	ug/L	ND	20	20	20.9	22.1	105	110	75-129	5	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.5	21.3	108	106	72-137	1	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	21.4	21.1	107	106	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.0	21.3	105	107	69-131	2	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	19.5	19.4	97	97	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	54.7	50.9	109	102	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	22.5	22.3	112	112	75-125	1	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.7	20.5	104	102	75-125	1	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.7	19.7	93	98	69-125	5	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	40.8	43.3	102	108	75-125	6	30	
1,2-Dichloropropane	ug/L	ND	20	20	20.2	21.0	101	105	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	19.9	19.9	99	99	75-125	0	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.3	20.1	101	101	75-125	1	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.7	20.8	103	104	75-125	1	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.2	19.7	101	99	74-125	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	462	437	116	109	67-128	6	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	22.2	24.1	111	121	65-150	8	30	
2,2-Dichloropropane	ug/L	ND	20	20	23.8	25.1	119	126	65-136	5	30	
2-Butanone (MEK)	ug/L	ND	100	100	95.9	93.4	96	93	59-125	3	30	
2-Chlorotoluene	ug/L	ND	20	20	18.4	18.1	92	90	73-126	2	30	
2-Hexanone	ug/L	ND	100	100	114	109	114	109	68-138	4	30	
4-Chlorotoluene	ug/L	ND	20	20	19.5	19.0	97	95	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	111	107	111	107	73-125	4	30	
Acetone	ug/L	ND	100	100	162	167	162	167	75-150	3	30	M1
Acrolein	ug/L	ND	200	200	223	220	112	110	53-150	2	30	
Acrylonitrile	ug/L	ND	200	200	203	203	101	102	69-127	0	30	
Benzene	ug/L	ND	20	20	20.2	21.5	101	108	74-125	6	30	
Bromobenzene	ug/L	ND	20	20	20.1	19.8	101	99	75-125	2	30	
Bromochloromethane	ug/L	ND	20	20	21.4	22.4	107	112	75-125	5	30	
Bromodichloromethane	ug/L	ND	20	20	21.7	23.5	108	118	75-125	8	30	
Bromoform	ug/L	ND	20	20	22.9	22.2	114	111	68-125	3	30	
Bromomethane	ug/L	ND	20	20	21.5	26.2	107	131	37-149	20	30	
Carbon disulfide	ug/L	ND	20	20	19.3	20.2	97	101	66-139	5	30	
Carbon tetrachloride	ug/L	ND	20	20	22.1	23.2	111	116	75-127	5	30	
Chlorobenzene	ug/L	ND	20	20	20.4	20.6	102	103	75-125	1	30	
Chloroethane	ug/L	ND	20	20	19.6	24.4	98	122	73-134	22	30	
Chloroform	ug/L	ND	20	20	19.4	20.5	97	103	71-125	6	30	
Chloromethane	ug/L	ND	20	20	18.2	22.1	91	110	58-133	19	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.2	21.2	101	106	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.4	23.1	112	116	71-125	3	30	
Dibromochloromethane	ug/L	ND	20	20	24.3	24.1	122	120	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845806 2845807

Parameter	Units	10421484001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	20	20	23.7	23.9	119	119	75-125	1	30	
Dichlorodifluoromethane	ug/L	ND	20	20	20.1	24.3	100	122	70-150	19	30	
Dichlorofluoromethane	ug/L	ND	20	20	18.9	23.3	95	117	75-126	21	30	
Diisopropyl ether	ug/L	ND	20	20	18.5	20.1	93	100	66-131	8	30	
Ethyl-tert-butyl ether	ug/L	ND	20	20	19.3	20.1	96	101	74-125	4	30	
Ethylbenzene	ug/L	ND	20	20	21.4	21.4	107	107	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.2	25.2	116	126	60-150	8	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.0	21.1	105	105	75-125	0	30	
m&p-Xylene	ug/L	ND	40	40	43.3	43.0	108	107	75-125	1	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.6	20.5	98	103	75-125	5	30	
Methylene Chloride	ug/L	ND	20	20	19.9	20.6	99	103	72-125	3	30	
n-Butylbenzene	ug/L	ND	20	20	20.2	20.8	101	104	73-140	3	30	
n-Propylbenzene	ug/L	ND	20	20	19.4	19.2	97	96	75-126	1	30	
Naphthalene	ug/L	ND	20	20	17.4	16.5	87	82	61-136	6	30	
o-Xylene	ug/L	ND	20	20	20.3	20.4	102	102	75-125	0	30	
p-Isopropyltoluene	ug/L	ND	20	20	20.4	21.2	102	106	73-133	4	30	
sec-Butylbenzene	ug/L	ND	20	20	19.8	20.2	99	101	75-132	2	30	
Styrene	ug/L	ND	20	20	21.6	21.8	108	109	71-125	1	30	
tert-Amylmethyl ether	ug/L	ND	20	20	19.7	20.6	98	103	71-125	4	30	
tert-Butyl Alcohol	ug/L	ND	200	200	231	212	115	106	72-130	8	30	
tert-Butylbenzene	ug/L	ND	20	20	20.0	20.0	100	100	75-126	0	30	
Tetrachloroethene	ug/L	ND	20	20	22.1	21.9	110	110	75-125	1	30	
Tetrahydrofuran	ug/L	ND	200	200	346	360	173	180	75-150	4	30	M1
Toluene	ug/L	ND	20	20	20.7	20.7	104	104	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.5	22.1	103	111	75-125	8	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	20.0	19.8	100	99	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.7	46.8	101	94	57-125	8	30	
Trichloroethene	ug/L	ND	20	20	22.3	23.7	111	119	75-125	6	30	
Trichlorofluoromethane	ug/L	ND	20	20	20.3	24.3	102	122	75-135	18	30	
Vinyl acetate	ug/L	ND	20	20	21.9	22.4	109	112	57-136	2	30	
Vinyl chloride	ug/L	ND	20	20	19.5	23.5	97	117	74-141	19	30	
Xylene (Total)	ug/L	ND	60	60	63.6	63.3	106	106	75-125	0	30	
1,2-Dichloroethane-d4 (S)	%.						88	89	75-125			
4-Bromofluorobenzene (S)	%.						95	93	75-125			
Toluene-d8 (S)	%.						95	93	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10420998

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10420998

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10420998001	**Freeman-WR15469**	EPA 3010	524232	EPA 6010C	524468
10420998001	**Freeman-WR15469**	EPA 7470A	524040	EPA 7470A	524168
10420998001	**Freeman-WR15469**	EPA 8260B	524068		

WO# : 10420998

10420998

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

Section A
Required Client Information:

Company:	UPRR
Address:	1400 W. 52nd Ave. Denver, CO 80221
Email:	atheria@up.com
Phone:	
Requested Due Date:	Standard

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	
Project Name:	Freeman, WA - Cenex Harvest Lease
Project #:	

Section C
Invoice Information:

Attention:	Anne Theriault (atheria@up.com)
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	36447 / 4

Regulatory Agency

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N): Y (6020 Dissolved Iron)

SAMPLE ID
One Character per box. (A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6020 Total Iron	6020 Dissolved Iron (Field Filtered)	SM4500P-E Total Phosphorus	TPH-DRO	TPH-GRO	RCRA 8 Metals Cu, Zn	Dry Weight
1	Freeman-WR15469	S		3-14	3:15	3-14	3:20														X	X	X	X
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*Field filtered by client	[signature]		13:15	[signature] / Pace	2/16	0945	3.4 / 0.9	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bruce Mudd

SIGNATURE of SAMPLER: [signature] DATE Signed:

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: F-MN-L-210-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #: WO# : 10420998

PM: JMG Due Date: 03/02/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7897 5740 1906

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 0.9 **Cooler Temp Corrected (°C):** 0.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** -0.2 **Date and Initials of Person Examining Contents:** ME 2/16/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used? -Pace Containers Used?	☐ Yes ☐ Yes	☒ No ☒ No		9. No container for TPH-Dro
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: wt	~~Yes~~ ME 2/16/18	☒ No		12. COC says 3-14 Sample say 2-14
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1 2/2
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Bruce at NRC Date/Time: 02/20/18

Comments/Resolution: Only analyze for VOCs and RCRA8+Cu/Zn.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1515	Temp: 0.9	Corrected Temp: 0.7
Time: 1520	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 02/20/18

Note: Whenever there is a discrepancy affecting North Carolina compliar form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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May 24, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on May 24, 2018 to reduce TO15 compound list to only report chloroform and carbon tetrachloride.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
1(612)607-6390
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	661508 UPRR Freeman
Pace Project No.:	10422626

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10422626001	**SV-105**	Air	03/01/18 10:03	03/06/18 09:45
10422626002	**SV-107**	Air	03/01/18 10:01	03/06/18 09:45
10422626003	**SV-111**	Air	03/01/18 12:32	03/06/18 09:45
10422626004	**Unused can # PACE3354**	Air		03/06/18 09:45
10422626005	**Unused can # PACE2816**	Air		03/06/18 09:45
10422626006	**Unused can # PACE2167**	Air		03/06/18 09:45
10422626007	**Unused can # PACE2761**	Air		03/06/18 09:45
10422626008	**Unused can # PACE3457**	Air		03/06/18 09:45

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SAMPLE ANALYTE COUNT

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10422626001	**SV-105**	TO-15	MJL	2	PASI-M
10422626002	**SV-107**	TO-15	MJL	2	PASI-M
10422626003	**SV-111**	TO-15	MJL	2	PASI-M

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SUMMARY OF DETECTION

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10422626001	**SV-105**					
TO-15	Carbon tetrachloride	160	ug/m3	0.99	03/12/18 14:58	SS
TO-15	Chloroform	8.8	ug/m3	0.77	03/12/18 14:58	
10422626002	**SV-107**					
TO-15	Carbon tetrachloride	225	ug/m3	4.8	03/13/18 09:56	SS
TO-15	Chloroform	9.3	ug/m3	0.74	03/12/18 15:25	
10422626003	**SV-111**					
TO-15	Carbon tetrachloride	396	ug/m3	14.3	03/13/18 10:20	SS
TO-15	Chloroform	56.4	ug/m3	0.89	03/12/18 15:53	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Method: **TO-15**
Description: TO15 MSV AIR
Client: UPRR_CH2M/Jacobs
Date: May 24, 2018

General Information:
3 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 526878

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 2858764)
  - Carbon tetrachloride
- SV-105 (Lab ID: 10422626001)
  - Carbon tetrachloride
- SV-107 (Lab ID: 10422626002)
  - Carbon tetrachloride
- SV-111 (Lab ID: 10422626003)
  - Carbon tetrachloride

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Sample: SV-105 **Lab ID: 10422626001** Collected: 03/01/18 10:03 Received: 03/06/18 09:45 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
Carbon tetrachloride	**160**	ug/m3	0.99	0.49	1.55		03/12/18 14:58	56-23-5	SS
Chloroform	**8.8**	ug/m3	0.77	0.36	1.55		03/12/18 14:58	67-66-3	

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Sample: SV-107 **Lab ID: 10422626002** Collected: 03/01/18 10:01 Received: 03/06/18 09:45 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
Carbon tetrachloride	**225**	ug/m3	4.8	2.4	7.45		03/13/18 09:56	56-23-5	SS
Chloroform	**9.3**	ug/m3	0.74	0.34	1.49		03/12/18 15:25	67-66-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Sample: SV-111 **Lab ID: 10422626003** Collected: 03/01/18 12:32 Received: 03/06/18 09:45 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
Carbon tetrachloride	**396**	ug/m3	14.3	7.1	22.4		03/13/18 10:20	56-23-5	SS
Chloroform	**56.4**	ug/m3	0.89	0.41	1.79		03/12/18 15:53	67-66-3	

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QUALITY CONTROL DATA

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

QC Batch: 526878 | Analysis Method: TO-15
QC Batch Method: TO-15 | Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10422626001, 10422626002, 10422626003

METHOD BLANK: 2858763 | Matrix: Air
Associated Lab Samples: 10422626001, 10422626002, 10422626003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/m3	<0.32	0.64	0.32	03/12/18 09:18	
Chloroform	ug/m3	<0.23	0.50	0.23	03/12/18 09:18	

LABORATORY CONTROL SAMPLE: 2858764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	64	65.9	103	60-145	SS
Chloroform	ug/m3	49.6	57.1	115	70-132	

SAMPLE DUPLICATE: 2859229

Parameter	Units	10422673001 Result	Dup Result	RPD	Max RPD	Qualifiers
Carbon tetrachloride	ug/m3	ND	<0.53		25	
Chloroform	ug/m3	ND	<0.39		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

SS This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 661508 UPRR Freeman
Pace Project No.: 10422626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10422626001	**SV-105**	TO-15	526878		
10422626002	**SV-107**	TO-15	526878		
10422626003	**SV-111**	TO-15	526878		

WO# : 10422626

10422626

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AIR: CHAIN-OF-CUSTODY / Ana

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

31427

Page: 1 of 1

Section A Required Client Information:

Company: CHZM
Address: 999 W. Riverside #500 Spokane, WA 99201
Email To: steve.demus@ch2m.com
Phone: 509-464-7222 Fax: —
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: David Hodson
Copy To: Steve demus ~~tdo~~ lindsey baumann
Purchase Order No.:
Project Name: UPRR Freeman
Project Number: 661508

Section C Invoice Information:

Attention:
Company Name: UPRR
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 37080

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other___

Location of Sampling by State: WA

Reporting Units: ug/m³ X mg/m³ ___ PPBV X PPMV ___ Other___

Report Level II.___ III.___ IV.___ Other___

Section D Required Client Information — AIR SAMPLE ID — Sample IDs MUST BE UNIQUE

Valid Media Codes:

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

Method: PM10, 3C - Fixed Gas (%), TO-3 BTEX, TO-3M (Methane), TO-14, TO-15 Full List (~~VOCs~~ SIM scan), TO-15 Short List BTEX, TO-15 Short List Chlorinated, TO-15 Short List (other)

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	Composite Start Date (2018)	Composite Start Time	Composite End/Grab Date (2018)	Composite End/Grab Time	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	SV-105	6LC	—	2/28	1146	~~3/2~~ 3/1 JE	1003	28.5	2.75	1651	0447						X				001
2	SV-107	↓	↓	↓	1148	↓	1001	29	2.75	3334	1264						X				002
3	SV-111	↓	↓	↓	1421	↓	1232	28.5	9	1074	1371						X				003
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / CH2M	3/2/18	1530	[signature] PACE	3-6-18	945

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples intact
—	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM / DD / YY): ~~2/28/18~~ ~~3/2/18~~ JE 3/1/18 JE

ORIGINAL

Pace Analytical	Document Name: Air Sample Condition Upon Receipt	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: F-MN-A-106-rev.14	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: CHZM

Project #:

WO#: 10422626
PM: CB Due Date: 03/13/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7476 3005 8079 /8090/8080

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Tin Can ☐ Other:

Temp Blank rec: ☐ Yes ☑ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 3-6-18 AA

Type of ice Received ☐ Blue ☐ Wet ☑ None

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.

Samples Received: 5/m cans, 1 T-fitting Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
SV-105	-		-4	5					
-107			-3	5					
-111			-7.5	5					
unused can	3354	1267	-26.5	—					
"	2816	0872	-28	—					
"	2167	1442	Broken -26.5						
"	2761	0019	-25.5	—					
"	3457	0019	-25.5	—					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Chris Bremer **Date:** 3/6/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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1700 Elm Street - Suite 200
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March 23, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Subslab Soil Gas and Soil
Pace Project No.:	10423366

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423366001	**SV110-S-0-030818**	Solid	03/08/18 12:50	03/13/18 10:00
10423366002	**SV110-S-3-030818**	Solid	03/08/18 13:00	03/13/18 10:00
10423366003	**SV105-S-0-030718**	Solid	03/07/18 09:20	03/13/18 10:00
10423366004	**SV106-S-0-030718**	Solid	03/07/18 09:30	03/13/18 10:00
10423366005	**SV106-S-3-030718**	Solid	03/07/18 10:10	03/13/18 10:00
10423366006	**SV107-S-0-030718**	Solid	03/07/18 09:40	03/13/18 10:00
10423366007	**SV105-S-3-030718**	Solid	03/07/18 10:30	03/13/18 10:00
10423366008	**SV107-S-2-030718**	Solid	03/07/18 10:00	03/13/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423366001	**SV110-S-0-030818**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366002	**SV110-S-3-030818**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366003	**SV105-S-0-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366004	**SV106-S-0-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366005	**SV106-S-3-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366006	**SV107-S-0-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366007	**SV105-S-3-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10423366008	**SV107-S-2-030718**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423366001	**SV110-S-0-030818**					
ASTM D2974	Percent Moisture	27.1	%	0.10	03/15/18 09:53	
EPA 8260B	2-Butanone (MEK)	18.2J	ug/kg	20.3	03/16/18 15:30	
EPA 8260B	Acetone	11.5J	ug/kg	50.6	03/16/18 15:30	
10423366002	**SV110-S-3-030818**					
ASTM D2974	Percent Moisture	18.9	%	0.10	03/15/18 09:53	
10423366003	**SV105-S-0-030718**					
ASTM D2974	Percent Moisture	20.2	%	0.10	03/15/18 09:54	
EPA 8260B	Acetone	14.0J	ug/kg	63.1	03/16/18 13:23	
EPA 8260B	Toluene	3.6J	ug/kg	5.0	03/16/18 13:23	
10423366004	**SV106-S-0-030718**					
ASTM D2974	Percent Moisture	22.6	%	0.10	03/15/18 12:15	
EPA 8260B	1,2-Dichloroethane	0.83J	ug/kg	4.5	03/16/18 13:42	
EPA 8260B	Carbon tetrachloride	8.3	ug/kg	4.5	03/16/18 13:42	
EPA 8260B	Chloroform	5.7	ug/kg	4.5	03/16/18 13:42	
10423366005	**SV106-S-3-030718**					
ASTM D2974	Percent Moisture	24.5	%	0.10	03/15/18 12:15	
EPA 8260B	Benzene	0.68J	ug/kg	4.8	03/16/18 14:01	
10423366006	**SV107-S-0-030718**					
ASTM D2974	Percent Moisture	21.6	%	0.10	03/15/18 12:15	
EPA 8260B	Carbon tetrachloride	1.4J	ug/kg	4.4	03/16/18 14:20	
EPA 8260B	Chloroform	0.97J	ug/kg	4.4	03/16/18 14:20	
10423366007	**SV105-S-3-030718**					
ASTM D2974	Percent Moisture	22.2	%	0.10	03/15/18 12:16	
10423366008	**SV107-S-2-030718**					
ASTM D2974	Percent Moisture	18.6	%	0.10	03/15/18 12:16	
EPA 8260B	Carbon tetrachloride	1.7J	ug/kg	3.6	03/16/18 15:12	
EPA 8260B	Chloroform	1.1J	ug/kg	3.6	03/16/18 15:12	

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PROJECT NARRATIVE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
8 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035 Low with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 527317

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
- SV107-S-0-030718 (Lab ID: 10423366006)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527317

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV110-S-0-030818 **Lab ID: 10423366001** Collected: 03/08/18 12:50 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**27.1**	%	0.10	0.10	1		03/15/18 09:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.76**	ug/kg	4.1	0.76	1	03/16/18 09:27	03/16/18 15:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.55**	ug/kg	4.1	0.55	1	03/16/18 09:27	03/16/18 15:30	79-34-5	
1,1,2-Trichloroethane	**<0.70**	ug/kg	4.1	0.70	1	03/16/18 09:27	03/16/18 15:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.73**	ug/kg	4.1	0.73	1	03/16/18 09:27	03/16/18 15:30	76-13-1	
1,1-Dichloroethane	**<0.73**	ug/kg	4.1	0.73	1	03/16/18 09:27	03/16/18 15:30	75-34-3	
1,1-Dichloroethene	**<0.58**	ug/kg	4.1	0.58	1	03/16/18 09:27	03/16/18 15:30	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.1	1.6	1	03/16/18 09:27	03/16/18 15:30	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/kg	4.1	0.20	1	03/16/18 09:27	03/16/18 15:30	95-63-6	
1,2-Dibromoethane (EDB)	**<0.79**	ug/kg	4.1	0.79	1	03/16/18 09:27	03/16/18 15:30	106-93-4	
1,2-Dichlorobenzene	**<0.64**	ug/kg	4.1	0.64	1	03/16/18 09:27	03/16/18 15:30	95-50-1	
1,2-Dichloroethane	**<0.72**	ug/kg	4.1	0.72	1	03/16/18 09:27	03/16/18 15:30	107-06-2	
1,3,5-Trimethylbenzene	**<0.49**	ug/kg	4.1	0.49	1	03/16/18 09:27	03/16/18 15:30	108-67-8	
1,3-Dichlorobenzene	**<0.52**	ug/kg	4.1	0.52	1	03/16/18 09:27	03/16/18 15:30	541-73-1	
1,4-Dichlorobenzene	**<0.59**	ug/kg	4.1	0.59	1	03/16/18 09:27	03/16/18 15:30	106-46-7	
2-Butanone (MEK)	**18.2J**	ug/kg	20.3	3.1	1	03/16/18 09:27	03/16/18 15:30	78-93-3	
2-Hexanone	**<2.3**	ug/kg	20.3	2.3	1	03/16/18 09:27	03/16/18 15:30	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.3	2.6	1	03/16/18 09:27	03/16/18 15:30	108-10-1	
Acetone	**11.5J**	ug/kg	50.6	8.4	1	03/16/18 09:27	03/16/18 15:30	67-64-1	
Benzene	**<0.56**	ug/kg	4.1	0.56	1	03/16/18 09:27	03/16/18 15:30	71-43-2	
Bromodichloromethane	**<0.64**	ug/kg	4.1	0.64	1	03/16/18 09:27	03/16/18 15:30	75-27-4	
Bromoform	**<2.6**	ug/kg	20.3	2.6	1	03/16/18 09:27	03/16/18 15:30	75-25-2	
Bromomethane	**<3.5**	ug/kg	20.3	3.5	1	03/16/18 09:27	03/16/18 15:30	74-83-9	
Carbon tetrachloride	**<0.56**	ug/kg	4.1	0.56	1	03/16/18 09:27	03/16/18 15:30	56-23-5	
Chlorobenzene	**<0.61**	ug/kg	4.1	0.61	1	03/16/18 09:27	03/16/18 15:30	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.1	1.6	1	03/16/18 09:27	03/16/18 15:30	75-00-3	
Chloroform	**<0.79**	ug/kg	4.1	0.79	1	03/16/18 09:27	03/16/18 15:30	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.1	1.8	1	03/16/18 09:27	03/16/18 15:30	74-87-3	
Dibromochloromethane	**<0.21**	ug/kg	4.1	0.21	1	03/16/18 09:27	03/16/18 15:30	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	10.1	3.8	1	03/16/18 09:27	03/16/18 15:30	75-71-8	
Ethylbenzene	**<0.74**	ug/kg	4.1	0.74	1	03/16/18 09:27	03/16/18 15:30	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	10.1	2.6	1	03/16/18 09:27	03/16/18 15:30	87-68-3	
Methyl-tert-butyl ether	**<0.60**	ug/kg	4.1	0.60	1	03/16/18 09:27	03/16/18 15:30	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.3	2.3	1	03/16/18 09:27	03/16/18 15:30	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.1	1.5	1	03/16/18 09:27	03/16/18 15:30	91-20-3	
Styrene	**<0.43**	ug/kg	4.1	0.43	1	03/16/18 09:27	03/16/18 15:30	100-42-5	
Tetrachloroethene	**<0.52**	ug/kg	4.1	0.52	1	03/16/18 09:27	03/16/18 15:30	127-18-4	
Tetrahydrofuran	**<9.3**	ug/kg	40.5	9.3	1	03/16/18 09:27	03/16/18 15:30	109-99-9	
Toluene	**<1.1**	ug/kg	4.1	1.1	1	03/16/18 09:27	03/16/18 15:30	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.1	0.11	1	03/16/18 09:27	03/16/18 15:30	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.1	1.7	1	03/16/18 09:27	03/16/18 15:30	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.1	2.0	1	03/16/18 09:27	03/16/18 15:30	108-05-4	
Vinyl chloride	**<0.96**	ug/kg	4.1	0.96	1	03/16/18 09:27	03/16/18 15:30	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV110-S-0-030818 **Lab ID: 10423366001** Collected: 03/08/18 12:50 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.69**	ug/kg	4.1	0.69	1	03/16/18 09:27	03/16/18 15:30	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.1	1.9	1	03/16/18 09:27	03/16/18 15:30	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.1	1.1	1	03/16/18 09:27	03/16/18 15:30	179601-23-1	
o-Xylene	**<0.49**	ug/kg	4.1	0.49	1	03/16/18 09:27	03/16/18 15:30	95-47-6	
trans-1,2-Dichloroethene	**<0.72**	ug/kg	4.1	0.72	1	03/16/18 09:27	03/16/18 15:30	156-60-5	
trans-1,3-Dichloropropene	**<0.74**	ug/kg	4.1	0.74	1	03/16/18 09:27	03/16/18 15:30	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-126		1	03/16/18 09:27	03/16/18 15:30	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	03/16/18 09:27	03/16/18 15:30	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	03/16/18 09:27	03/16/18 15:30	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10423366

Sample: SV110-S-3-030818 **Lab ID: 10423366002** Collected: 03/08/18 13:00 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.9**	%	0.10	0.10	1		03/15/18 09:53		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.80**	ug/kg	4.2	0.80	1	03/16/18 09:27	03/16/18 15:49	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.57**	ug/kg	4.2	0.57	1	03/16/18 09:27	03/16/18 15:49	79-34-5	
1,1,2-Trichloroethane	**<0.74**	ug/kg	4.2	0.74	1	03/16/18 09:27	03/16/18 15:49	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.77**	ug/kg	4.2	0.77	1	03/16/18 09:27	03/16/18 15:49	76-13-1	
1,1-Dichloroethane	**<0.76**	ug/kg	4.2	0.76	1	03/16/18 09:27	03/16/18 15:49	75-34-3	
1,1-Dichloroethene	**<0.61**	ug/kg	4.2	0.61	1	03/16/18 09:27	03/16/18 15:49	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.2	1.7	1	03/16/18 09:27	03/16/18 15:49	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.2	0.21	1	03/16/18 09:27	03/16/18 15:49	95-63-6	
1,2-Dibromoethane (EDB)	**<0.83**	ug/kg	4.2	0.83	1	03/16/18 09:27	03/16/18 15:49	106-93-4	
1,2-Dichlorobenzene	**<0.67**	ug/kg	4.2	0.67	1	03/16/18 09:27	03/16/18 15:49	95-50-1	
1,2-Dichloroethane	**<0.75**	ug/kg	4.2	0.75	1	03/16/18 09:27	03/16/18 15:49	107-06-2	
1,3,5-Trimethylbenzene	**<0.51**	ug/kg	4.2	0.51	1	03/16/18 09:27	03/16/18 15:49	108-67-8	
1,3-Dichlorobenzene	**<0.55**	ug/kg	4.2	0.55	1	03/16/18 09:27	03/16/18 15:49	541-73-1	
1,4-Dichlorobenzene	**<0.61**	ug/kg	4.2	0.61	1	03/16/18 09:27	03/16/18 15:49	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.2	3.3	1	03/16/18 09:27	03/16/18 15:49	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.2	2.5	1	03/16/18 09:27	03/16/18 15:49	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.7**	ug/kg	21.2	2.7	1	03/16/18 09:27	03/16/18 15:49	108-10-1	
Acetone	**<8.8**	ug/kg	53.0	8.8	1	03/16/18 09:27	03/16/18 15:49	67-64-1	
Benzene	**<0.59**	ug/kg	4.2	0.59	1	03/16/18 09:27	03/16/18 15:49	71-43-2	
Bromodichloromethane	**<0.67**	ug/kg	4.2	0.67	1	03/16/18 09:27	03/16/18 15:49	75-27-4	
Bromoform	**<2.7**	ug/kg	21.2	2.7	1	03/16/18 09:27	03/16/18 15:49	75-25-2	
Bromomethane	**<3.7**	ug/kg	21.2	3.7	1	03/16/18 09:27	03/16/18 15:49	74-83-9	
Carbon tetrachloride	**<0.59**	ug/kg	4.2	0.59	1	03/16/18 09:27	03/16/18 15:49	56-23-5	
Chlorobenzene	**<0.63**	ug/kg	4.2	0.63	1	03/16/18 09:27	03/16/18 15:49	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.6	1.6	1	03/16/18 09:27	03/16/18 15:49	75-00-3	
Chloroform	**<0.83**	ug/kg	4.2	0.83	1	03/16/18 09:27	03/16/18 15:49	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.6	1.9	1	03/16/18 09:27	03/16/18 15:49	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.2	0.22	1	03/16/18 09:27	03/16/18 15:49	124-48-1	
Dichlorodifluoromethane	**<4.0**	ug/kg	10.6	4.0	1	03/16/18 09:27	03/16/18 15:49	75-71-8	
Ethylbenzene	**<0.78**	ug/kg	4.2	0.78	1	03/16/18 09:27	03/16/18 15:49	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.6	2.8	1	03/16/18 09:27	03/16/18 15:49	87-68-3	
Methyl-tert-butyl ether	**<0.63**	ug/kg	4.2	0.63	1	03/16/18 09:27	03/16/18 15:49	1634-04-4	
Methylene Chloride	**<2.4**	ug/kg	21.2	2.4	1	03/16/18 09:27	03/16/18 15:49	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.6	1.5	1	03/16/18 09:27	03/16/18 15:49	91-20-3	
Styrene	**<0.45**	ug/kg	4.2	0.45	1	03/16/18 09:27	03/16/18 15:49	100-42-5	
Tetrachloroethene	**<0.55**	ug/kg	4.2	0.55	1	03/16/18 09:27	03/16/18 15:49	127-18-4	
Tetrahydrofuran	**<9.7**	ug/kg	42.4	9.7	1	03/16/18 09:27	03/16/18 15:49	109-99-9	
Toluene	**<1.2**	ug/kg	4.2	1.2	1	03/16/18 09:27	03/16/18 15:49	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.2	0.12	1	03/16/18 09:27	03/16/18 15:49	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.6	1.8	1	03/16/18 09:27	03/16/18 15:49	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.6	2.0	1	03/16/18 09:27	03/16/18 15:49	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.2	1.0	1	03/16/18 09:27	03/16/18 15:49	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10423366

Sample: SV110-S-3-030818 **Lab ID: 10423366002** Collected: 03/08/18 13:00 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.72**	ug/kg	4.2	0.72	1	03/16/18 09:27	03/16/18 15:49	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.2	2.0	1	03/16/18 09:27	03/16/18 15:49	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.5	1.1	1	03/16/18 09:27	03/16/18 15:49	179601-23-1	
o-Xylene	**<0.51**	ug/kg	4.2	0.51	1	03/16/18 09:27	03/16/18 15:49	95-47-6	
trans-1,2-Dichloroethene	**<0.75**	ug/kg	4.2	0.75	1	03/16/18 09:27	03/16/18 15:49	156-60-5	
trans-1,3-Dichloropropene	**<0.78**	ug/kg	4.2	0.78	1	03/16/18 09:27	03/16/18 15:49	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	81	%.	75-126		1	03/16/18 09:27	03/16/18 15:49	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	03/16/18 09:27	03/16/18 15:49	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	03/16/18 09:27	03/16/18 15:49	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV105-S-0-030718 **Lab ID: 10423366003** Collected: 03/07/18 09:20 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**20.2**	%	0.10	0.10	1		03/15/18 09:54		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.95**	ug/kg	5.0	0.95	1	03/16/18 09:27	03/16/18 13:23	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.68**	ug/kg	5.0	0.68	1	03/16/18 09:27	03/16/18 13:23	79-34-5	
1,1,2-Trichloroethane	**<0.88**	ug/kg	5.0	0.88	1	03/16/18 09:27	03/16/18 13:23	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.91**	ug/kg	5.0	0.91	1	03/16/18 09:27	03/16/18 13:23	76-13-1	
1,1-Dichloroethane	**<0.90**	ug/kg	5.0	0.90	1	03/16/18 09:27	03/16/18 13:23	75-34-3	
1,1-Dichloroethene	**<0.72**	ug/kg	5.0	0.72	1	03/16/18 09:27	03/16/18 13:23	75-35-4	
1,2,4-Trichlorobenzene	**<2.0**	ug/kg	5.0	2.0	1	03/16/18 09:27	03/16/18 13:23	120-82-1	
1,2,4-Trimethylbenzene	**<0.24**	ug/kg	5.0	0.24	1	03/16/18 09:27	03/16/18 13:23	95-63-6	
1,2-Dibromoethane (EDB)	**<0.99**	ug/kg	5.0	0.99	1	03/16/18 09:27	03/16/18 13:23	106-93-4	
1,2-Dichlorobenzene	**<0.79**	ug/kg	5.0	0.79	1	03/16/18 09:27	03/16/18 13:23	95-50-1	
1,2-Dichloroethane	**<0.89**	ug/kg	5.0	0.89	1	03/16/18 09:27	03/16/18 13:23	107-06-2	
1,3,5-Trimethylbenzene	**<0.61**	ug/kg	5.0	0.61	1	03/16/18 09:27	03/16/18 13:23	108-67-8	
1,3-Dichlorobenzene	**<0.65**	ug/kg	5.0	0.65	1	03/16/18 09:27	03/16/18 13:23	541-73-1	
1,4-Dichlorobenzene	**<0.73**	ug/kg	5.0	0.73	1	03/16/18 09:27	03/16/18 13:23	106-46-7	
2-Butanone (MEK)	**<3.9**	ug/kg	25.2	3.9	1	03/16/18 09:27	03/16/18 13:23	78-93-3	
2-Hexanone	**<2.9**	ug/kg	25.2	2.9	1	03/16/18 09:27	03/16/18 13:23	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.3**	ug/kg	25.2	3.3	1	03/16/18 09:27	03/16/18 13:23	108-10-1	
Acetone	**14.0J**	ug/kg	63.1	10.5	1	03/16/18 09:27	03/16/18 13:23	67-64-1	
Benzene	**<0.70**	ug/kg	5.0	0.70	1	03/16/18 09:27	03/16/18 13:23	71-43-2	
Bromodichloromethane	**<0.79**	ug/kg	5.0	0.79	1	03/16/18 09:27	03/16/18 13:23	75-27-4	
Bromoform	**<3.2**	ug/kg	25.2	3.2	1	03/16/18 09:27	03/16/18 13:23	75-25-2	
Bromomethane	**<4.4**	ug/kg	25.2	4.4	1	03/16/18 09:27	03/16/18 13:23	74-83-9	
Carbon tetrachloride	**<0.70**	ug/kg	5.0	0.70	1	03/16/18 09:27	03/16/18 13:23	56-23-5	
Chlorobenzene	**<0.75**	ug/kg	5.0	0.75	1	03/16/18 09:27	03/16/18 13:23	108-90-7	
Chloroethane	**<2.0**	ug/kg	12.6	2.0	1	03/16/18 09:27	03/16/18 13:23	75-00-3	
Chloroform	**<0.99**	ug/kg	5.0	0.99	1	03/16/18 09:27	03/16/18 13:23	67-66-3	
Chloromethane	**<2.2**	ug/kg	12.6	2.2	1	03/16/18 09:27	03/16/18 13:23	74-87-3	
Dibromochloromethane	**<0.26**	ug/kg	5.0	0.26	1	03/16/18 09:27	03/16/18 13:23	124-48-1	
Dichlorodifluoromethane	**<4.8**	ug/kg	12.6	4.8	1	03/16/18 09:27	03/16/18 13:23	75-71-8	
Ethylbenzene	**<0.92**	ug/kg	5.0	0.92	1	03/16/18 09:27	03/16/18 13:23	100-41-4	
Hexachloro-1,3-butadiene	**<3.3**	ug/kg	12.6	3.3	1	03/16/18 09:27	03/16/18 13:23	87-68-3	
Methyl-tert-butyl ether	**<0.75**	ug/kg	5.0	0.75	1	03/16/18 09:27	03/16/18 13:23	1634-04-4	
Methylene Chloride	**<2.9**	ug/kg	25.2	2.9	1	03/16/18 09:27	03/16/18 13:23	75-09-2	
Naphthalene	**<1.8**	ug/kg	12.6	1.8	1	03/16/18 09:27	03/16/18 13:23	91-20-3	
Styrene	**<0.53**	ug/kg	5.0	0.53	1	03/16/18 09:27	03/16/18 13:23	100-42-5	
Tetrachloroethene	**<0.65**	ug/kg	5.0	0.65	1	03/16/18 09:27	03/16/18 13:23	127-18-4	
Tetrahydrofuran	**<11.5**	ug/kg	50.5	11.5	1	03/16/18 09:27	03/16/18 13:23	109-99-9	
Toluene	**3.6J**	ug/kg	5.0	1.4	1	03/16/18 09:27	03/16/18 13:23	108-88-3	
Trichloroethene	**<0.14**	ug/kg	5.0	0.14	1	03/16/18 09:27	03/16/18 13:23	79-01-6	
Trichlorofluoromethane	**<2.1**	ug/kg	12.6	2.1	1	03/16/18 09:27	03/16/18 13:23	75-69-4	
Vinyl acetate	**<2.4**	ug/kg	12.6	2.4	1	03/16/18 09:27	03/16/18 13:23	108-05-4	
Vinyl chloride	**<1.2**	ug/kg	5.0	1.2	1	03/16/18 09:27	03/16/18 13:23	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10423366

Sample: SV105-S-0-030718 **Lab ID: 10423366003** Collected: 03/07/18 09:20 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.86**	ug/kg	5.0	0.86	1	03/16/18 09:27	03/16/18 13:23	156-59-2	
cis-1,3-Dichloropropene	**<2.4**	ug/kg	5.0	2.4	1	03/16/18 09:27	03/16/18 13:23	10061-01-5	
m&p-Xylene	**<1.3**	ug/kg	10.1	1.3	1	03/16/18 09:27	03/16/18 13:23	179601-23-1	
o-Xylene	**<0.60**	ug/kg	5.0	0.60	1	03/16/18 09:27	03/16/18 13:23	95-47-6	
trans-1,2-Dichloroethene	**<0.89**	ug/kg	5.0	0.89	1	03/16/18 09:27	03/16/18 13:23	156-60-5	
trans-1,3-Dichloropropene	**<0.93**	ug/kg	5.0	0.93	1	03/16/18 09:27	03/16/18 13:23	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-126		1	03/16/18 09:27	03/16/18 13:23	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	03/16/18 09:27	03/16/18 13:23	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-128		1	03/16/18 09:27	03/16/18 13:23	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV106-S-0-030718 **Lab ID: 10423366004** Collected: 03/07/18 09:30 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.6**	%	0.10	0.10	1		03/15/18 12:15		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.85**	ug/kg	4.5	0.85	1	03/16/18 09:27	03/16/18 13:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.61**	ug/kg	4.5	0.61	1	03/16/18 09:27	03/16/18 13:42	79-34-5	
1,1,2-Trichloroethane	**<0.78**	ug/kg	4.5	0.78	1	03/16/18 09:27	03/16/18 13:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.82**	ug/kg	4.5	0.82	1	03/16/18 09:27	03/16/18 13:42	76-13-1	
1,1-Dichloroethane	**<0.81**	ug/kg	4.5	0.81	1	03/16/18 09:27	03/16/18 13:42	75-34-3	
1,1-Dichloroethene	**<0.65**	ug/kg	4.5	0.65	1	03/16/18 09:27	03/16/18 13:42	75-35-4	
1,2,4-Trichlorobenzene	**<1.8**	ug/kg	4.5	1.8	1	03/16/18 09:27	03/16/18 13:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.22**	ug/kg	4.5	0.22	1	03/16/18 09:27	03/16/18 13:42	95-63-6	
1,2-Dibromoethane (EDB)	**<0.89**	ug/kg	4.5	0.89	1	03/16/18 09:27	03/16/18 13:42	106-93-4	
1,2-Dichlorobenzene	**<0.71**	ug/kg	4.5	0.71	1	03/16/18 09:27	03/16/18 13:42	95-50-1	
1,2-Dichloroethane	**0.83J**	ug/kg	4.5	0.80	1	03/16/18 09:27	03/16/18 13:42	107-06-2	
1,3,5-Trimethylbenzene	**<0.54**	ug/kg	4.5	0.54	1	03/16/18 09:27	03/16/18 13:42	108-67-8	
1,3-Dichlorobenzene	**<0.58**	ug/kg	4.5	0.58	1	03/16/18 09:27	03/16/18 13:42	541-73-1	
1,4-Dichlorobenzene	**<0.65**	ug/kg	4.5	0.65	1	03/16/18 09:27	03/16/18 13:42	106-46-7	
2-Butanone (MEK)	**<3.5**	ug/kg	22.6	3.5	1	03/16/18 09:27	03/16/18 13:42	78-93-3	
2-Hexanone	**<2.6**	ug/kg	22.6	2.6	1	03/16/18 09:27	03/16/18 13:42	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.9**	ug/kg	22.6	2.9	1	03/16/18 09:27	03/16/18 13:42	108-10-1	
Acetone	**<9.4**	ug/kg	56.5	9.4	1	03/16/18 09:27	03/16/18 13:42	67-64-1	
Benzene	**<0.63**	ug/kg	4.5	0.63	1	03/16/18 09:27	03/16/18 13:42	71-43-2	
Bromodichloromethane	**<0.71**	ug/kg	4.5	0.71	1	03/16/18 09:27	03/16/18 13:42	75-27-4	
Bromoform	**<2.9**	ug/kg	22.6	2.9	1	03/16/18 09:27	03/16/18 13:42	75-25-2	
Bromomethane	**<3.9**	ug/kg	22.6	3.9	1	03/16/18 09:27	03/16/18 13:42	74-83-9	
Carbon tetrachloride	**8.3**	ug/kg	4.5	0.63	1	03/16/18 09:27	03/16/18 13:42	56-23-5	
Chlorobenzene	**<0.68**	ug/kg	4.5	0.68	1	03/16/18 09:27	03/16/18 13:42	108-90-7	
Chloroethane	**<1.8**	ug/kg	11.3	1.8	1	03/16/18 09:27	03/16/18 13:42	75-00-3	
Chloroform	**5.7**	ug/kg	4.5	0.89	1	03/16/18 09:27	03/16/18 13:42	67-66-3	
Chloromethane	**<2.0**	ug/kg	11.3	2.0	1	03/16/18 09:27	03/16/18 13:42	74-87-3	
Dibromochloromethane	**<0.23**	ug/kg	4.5	0.23	1	03/16/18 09:27	03/16/18 13:42	124-48-1	
Dichlorodifluoromethane	**<4.3**	ug/kg	11.3	4.3	1	03/16/18 09:27	03/16/18 13:42	75-71-8	
Ethylbenzene	**<0.83**	ug/kg	4.5	0.83	1	03/16/18 09:27	03/16/18 13:42	100-41-4	
Hexachloro-1,3-butadiene	**<2.9**	ug/kg	11.3	2.9	1	03/16/18 09:27	03/16/18 13:42	87-68-3	
Methyl-tert-butyl ether	**<0.67**	ug/kg	4.5	0.67	1	03/16/18 09:27	03/16/18 13:42	1634-04-4	
Methylene Chloride	**<2.6**	ug/kg	22.6	2.6	1	03/16/18 09:27	03/16/18 13:42	75-09-2	
Naphthalene	**<1.6**	ug/kg	11.3	1.6	1	03/16/18 09:27	03/16/18 13:42	91-20-3	
Styrene	**<0.48**	ug/kg	4.5	0.48	1	03/16/18 09:27	03/16/18 13:42	100-42-5	
Tetrachloroethene	**<0.58**	ug/kg	4.5	0.58	1	03/16/18 09:27	03/16/18 13:42	127-18-4	
Tetrahydrofuran	**<10.3**	ug/kg	45.2	10.3	1	03/16/18 09:27	03/16/18 13:42	109-99-9	
Toluene	**<1.2**	ug/kg	4.5	1.2	1	03/16/18 09:27	03/16/18 13:42	108-88-3	
Trichloroethene	**<0.13**	ug/kg	4.5	0.13	1	03/16/18 09:27	03/16/18 13:42	79-01-6	
Trichlorofluoromethane	**<1.9**	ug/kg	11.3	1.9	1	03/16/18 09:27	03/16/18 13:42	75-69-4	
Vinyl acetate	**<2.2**	ug/kg	11.3	2.2	1	03/16/18 09:27	03/16/18 13:42	108-05-4	
Vinyl chloride	**<1.1**	ug/kg	4.5	1.1	1	03/16/18 09:27	03/16/18 13:42	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV106-S-0-030718 **Lab ID: 10423366004** Collected: 03/07/18 09:30 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.77**	ug/kg	4.5	0.77	1	03/16/18 09:27	03/16/18 13:42	156-59-2	
cis-1,3-Dichloropropene	**<2.1**	ug/kg	4.5	2.1	1	03/16/18 09:27	03/16/18 13:42	10061-01-5	
m&p-Xylene	**<1.2**	ug/kg	9.0	1.2	1	03/16/18 09:27	03/16/18 13:42	179601-23-1	
o-Xylene	**<0.54**	ug/kg	4.5	0.54	1	03/16/18 09:27	03/16/18 13:42	95-47-6	
trans-1,2-Dichloroethene	**<0.80**	ug/kg	4.5	0.80	1	03/16/18 09:27	03/16/18 13:42	156-60-5	
trans-1,3-Dichloropropene	**<0.83**	ug/kg	4.5	0.83	1	03/16/18 09:27	03/16/18 13:42	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	86	%.	75-126		1	03/16/18 09:27	03/16/18 13:42	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	03/16/18 09:27	03/16/18 13:42	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	03/16/18 09:27	03/16/18 13:42	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV106-S-3-030718 **Lab ID: 10423366005** Collected: 03/07/18 10:10 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**24.5**	%	0.10	0.10	1		03/15/18 12:15		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.90**	ug/kg	4.8	0.90	1	03/16/18 09:27	03/16/18 14:01	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.65**	ug/kg	4.8	0.65	1	03/16/18 09:27	03/16/18 14:01	79-34-5	
1,1,2-Trichloroethane	**<0.83**	ug/kg	4.8	0.83	1	03/16/18 09:27	03/16/18 14:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.87**	ug/kg	4.8	0.87	1	03/16/18 09:27	03/16/18 14:01	76-13-1	
1,1-Dichloroethane	**<0.86**	ug/kg	4.8	0.86	1	03/16/18 09:27	03/16/18 14:01	75-34-3	
1,1-Dichloroethene	**<0.69**	ug/kg	4.8	0.69	1	03/16/18 09:27	03/16/18 14:01	75-35-4	
1,2,4-Trichlorobenzene	**<1.9**	ug/kg	4.8	1.9	1	03/16/18 09:27	03/16/18 14:01	120-82-1	
1,2,4-Trimethylbenzene	**<0.23**	ug/kg	4.8	0.23	1	03/16/18 09:27	03/16/18 14:01	95-63-6	
1,2-Dibromoethane (EDB)	**<0.94**	ug/kg	4.8	0.94	1	03/16/18 09:27	03/16/18 14:01	106-93-4	
1,2-Dichlorobenzene	**<0.75**	ug/kg	4.8	0.75	1	03/16/18 09:27	03/16/18 14:01	95-50-1	
1,2-Dichloroethane	**<0.85**	ug/kg	4.8	0.85	1	03/16/18 09:27	03/16/18 14:01	107-06-2	
1,3,5-Trimethylbenzene	**<0.58**	ug/kg	4.8	0.58	1	03/16/18 09:27	03/16/18 14:01	108-67-8	
1,3-Dichlorobenzene	**<0.62**	ug/kg	4.8	0.62	1	03/16/18 09:27	03/16/18 14:01	541-73-1	
1,4-Dichlorobenzene	**<0.69**	ug/kg	4.8	0.69	1	03/16/18 09:27	03/16/18 14:01	106-46-7	
2-Butanone (MEK)	**<3.7**	ug/kg	24.0	3.7	1	03/16/18 09:27	03/16/18 14:01	78-93-3	
2-Hexanone	**<2.8**	ug/kg	24.0	2.8	1	03/16/18 09:27	03/16/18 14:01	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.1**	ug/kg	24.0	3.1	1	03/16/18 09:27	03/16/18 14:01	108-10-1	
Acetone	**<10**	ug/kg	59.9	10	1	03/16/18 09:27	03/16/18 14:01	67-64-1	
Benzene	**0.68J**	ug/kg	4.8	0.66	1	03/16/18 09:27	03/16/18 14:01	71-43-2	
Bromodichloromethane	**<0.75**	ug/kg	4.8	0.75	1	03/16/18 09:27	03/16/18 14:01	75-27-4	
Bromoform	**<3.1**	ug/kg	24.0	3.1	1	03/16/18 09:27	03/16/18 14:01	75-25-2	
Bromomethane	**<4.2**	ug/kg	24.0	4.2	1	03/16/18 09:27	03/16/18 14:01	74-83-9	
Carbon tetrachloride	**<0.66**	ug/kg	4.8	0.66	1	03/16/18 09:27	03/16/18 14:01	56-23-5	
Chlorobenzene	**<0.72**	ug/kg	4.8	0.72	1	03/16/18 09:27	03/16/18 14:01	108-90-7	
Chloroethane	**<1.9**	ug/kg	12.0	1.9	1	03/16/18 09:27	03/16/18 14:01	75-00-3	
Chloroform	**<0.94**	ug/kg	4.8	0.94	1	03/16/18 09:27	03/16/18 14:01	67-66-3	
Chloromethane	**<2.1**	ug/kg	12.0	2.1	1	03/16/18 09:27	03/16/18 14:01	74-87-3	
Dibromochloromethane	**<0.24**	ug/kg	4.8	0.24	1	03/16/18 09:27	03/16/18 14:01	124-48-1	
Dichlorodifluoromethane	**<4.5**	ug/kg	12.0	4.5	1	03/16/18 09:27	03/16/18 14:01	75-71-8	
Ethylbenzene	**<0.88**	ug/kg	4.8	0.88	1	03/16/18 09:27	03/16/18 14:01	100-41-4	
Hexachloro-1,3-butadiene	**<3.1**	ug/kg	12.0	3.1	1	03/16/18 09:27	03/16/18 14:01	87-68-3	
Methyl-tert-butyl ether	**<0.71**	ug/kg	4.8	0.71	1	03/16/18 09:27	03/16/18 14:01	1634-04-4	
Methylene Chloride	**<2.7**	ug/kg	24.0	2.7	1	03/16/18 09:27	03/16/18 14:01	75-09-2	
Naphthalene	**<1.7**	ug/kg	12.0	1.7	1	03/16/18 09:27	03/16/18 14:01	91-20-3	
Styrene	**<0.51**	ug/kg	4.8	0.51	1	03/16/18 09:27	03/16/18 14:01	100-42-5	
Tetrachloroethene	**<0.62**	ug/kg	4.8	0.62	1	03/16/18 09:27	03/16/18 14:01	127-18-4	
Tetrahydrofuran	**<10.9**	ug/kg	47.9	10.9	1	03/16/18 09:27	03/16/18 14:01	109-99-9	
Toluene	**<1.3**	ug/kg	4.8	1.3	1	03/16/18 09:27	03/16/18 14:01	108-88-3	
Trichloroethene	**<0.13**	ug/kg	4.8	0.13	1	03/16/18 09:27	03/16/18 14:01	79-01-6	
Trichlorofluoromethane	**<2.0**	ug/kg	12.0	2.0	1	03/16/18 09:27	03/16/18 14:01	75-69-4	
Vinyl acetate	**<2.3**	ug/kg	12.0	2.3	1	03/16/18 09:27	03/16/18 14:01	108-05-4	
Vinyl chloride	**<1.1**	ug/kg	4.8	1.1	1	03/16/18 09:27	03/16/18 14:01	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV106-S-3-030718 **Lab ID: 10423366005** Collected: 03/07/18 10:10 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.81**	ug/kg	4.8	0.81	1	03/16/18 09:27	03/16/18 14:01	156-59-2	
cis-1,3-Dichloropropene	**<2.3**	ug/kg	4.8	2.3	1	03/16/18 09:27	03/16/18 14:01	10061-01-5	
m&p-Xylene	**<1.3**	ug/kg	9.6	1.3	1	03/16/18 09:27	03/16/18 14:01	179601-23-1	
o-Xylene	**<0.57**	ug/kg	4.8	0.57	1	03/16/18 09:27	03/16/18 14:01	95-47-6	
trans-1,2-Dichloroethene	**<0.85**	ug/kg	4.8	0.85	1	03/16/18 09:27	03/16/18 14:01	156-60-5	
trans-1,3-Dichloropropene	**<0.88**	ug/kg	4.8	0.88	1	03/16/18 09:27	03/16/18 14:01	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-126		1	03/16/18 09:27	03/16/18 14:01	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	03/16/18 09:27	03/16/18 14:01	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	03/16/18 09:27	03/16/18 14:01	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV107-S-0-030718 **Lab ID: 10423366006** Collected: 03/07/18 09:40 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**21.6**	%	0.10	0.10	1		03/15/18 12:15		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.82**	ug/kg	4.4	0.82	1	03/16/18 09:27	03/16/18 14:20	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.59**	ug/kg	4.4	0.59	1	03/16/18 09:27	03/16/18 14:20	79-34-5	
1,1,2-Trichloroethane	**<0.76**	ug/kg	4.4	0.76	1	03/16/18 09:27	03/16/18 14:20	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.79**	ug/kg	4.4	0.79	1	03/16/18 09:27	03/16/18 14:20	76-13-1	
1,1-Dichloroethane	**<0.79**	ug/kg	4.4	0.79	1	03/16/18 09:27	03/16/18 14:20	75-34-3	
1,1-Dichloroethene	**<0.63**	ug/kg	4.4	0.63	1	03/16/18 09:27	03/16/18 14:20	75-35-4	
1,2,4-Trichlorobenzene	**<1.8**	ug/kg	4.4	1.8	1	03/16/18 09:27	03/16/18 14:20	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.4	0.21	1	03/16/18 09:27	03/16/18 14:20	95-63-6	
1,2-Dibromoethane (EDB)	**<0.86**	ug/kg	4.4	0.86	1	03/16/18 09:27	03/16/18 14:20	106-93-4	
1,2-Dichlorobenzene	**<0.69**	ug/kg	4.4	0.69	1	03/16/18 09:27	03/16/18 14:20	95-50-1	
1,2-Dichloroethane	**<0.77**	ug/kg	4.4	0.77	1	03/16/18 09:27	03/16/18 14:20	107-06-2	
1,3,5-Trimethylbenzene	**<0.53**	ug/kg	4.4	0.53	1	03/16/18 09:27	03/16/18 14:20	108-67-8	
1,3-Dichlorobenzene	**<0.57**	ug/kg	4.4	0.57	1	03/16/18 09:27	03/16/18 14:20	541-73-1	
1,4-Dichlorobenzene	**<0.63**	ug/kg	4.4	0.63	1	03/16/18 09:27	03/16/18 14:20	106-46-7	
2-Butanone (MEK)	**<3.4**	ug/kg	21.9	3.4	1	03/16/18 09:27	03/16/18 14:20	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.9	2.5	1	03/16/18 09:27	03/16/18 14:20	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.9	2.8	1	03/16/18 09:27	03/16/18 14:20	108-10-1	
Acetone	**<9.1**	ug/kg	54.8	9.1	1	03/16/18 09:27	03/16/18 14:20	67-64-1	
Benzene	**<0.61**	ug/kg	4.4	0.61	1	03/16/18 09:27	03/16/18 14:20	71-43-2	
Bromodichloromethane	**<0.69**	ug/kg	4.4	0.69	1	03/16/18 09:27	03/16/18 14:20	75-27-4	
Bromoform	**<2.8**	ug/kg	21.9	2.8	1	03/16/18 09:27	03/16/18 14:20	75-25-2	
Bromomethane	**<3.8**	ug/kg	21.9	3.8	1	03/16/18 09:27	03/16/18 14:20	74-83-9	
Carbon tetrachloride	**1.4J**	ug/kg	4.4	0.61	1	03/16/18 09:27	03/16/18 14:20	56-23-5	
Chlorobenzene	**<0.66**	ug/kg	4.4	0.66	1	03/16/18 09:27	03/16/18 14:20	108-90-7	
Chloroethane	**<1.7**	ug/kg	11.0	1.7	1	03/16/18 09:27	03/16/18 14:20	75-00-3	
Chloroform	**0.97J**	ug/kg	4.4	0.86	1	03/16/18 09:27	03/16/18 14:20	67-66-3	
Chloromethane	**<1.9**	ug/kg	11.0	1.9	1	03/16/18 09:27	03/16/18 14:20	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.4	0.22	1	03/16/18 09:27	03/16/18 14:20	124-48-1	
Dichlorodifluoromethane	**<4.2**	ug/kg	11.0	4.2	1	03/16/18 09:27	03/16/18 14:20	75-71-8	
Ethylbenzene	**<0.80**	ug/kg	4.4	0.80	1	03/16/18 09:27	03/16/18 14:20	100-41-4	
Hexachloro-1,3-butadiene	**<2.9**	ug/kg	11.0	2.9	1	03/16/18 09:27	03/16/18 14:20	87-68-3	
Methyl-tert-butyl ether	**<0.65**	ug/kg	4.4	0.65	1	03/16/18 09:27	03/16/18 14:20	1634-04-4	
Methylene Chloride	**<2.5**	ug/kg	21.9	2.5	1	03/16/18 09:27	03/16/18 14:20	75-09-2	
Naphthalene	**<1.6**	ug/kg	11.0	1.6	1	03/16/18 09:27	03/16/18 14:20	91-20-3	
Styrene	**<0.46**	ug/kg	4.4	0.46	1	03/16/18 09:27	03/16/18 14:20	100-42-5	
Tetrachloroethene	**<0.57**	ug/kg	4.4	0.57	1	03/16/18 09:27	03/16/18 14:20	127-18-4	
Tetrahydrofuran	**<10.0**	ug/kg	43.8	10.0	1	03/16/18 09:27	03/16/18 14:20	109-99-9	
Toluene	**<1.2**	ug/kg	4.4	1.2	1	03/16/18 09:27	03/16/18 14:20	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.4	0.12	1	03/16/18 09:27	03/16/18 14:20	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	11.0	1.8	1	03/16/18 09:27	03/16/18 14:20	75-69-4	
Vinyl acetate	**<2.1**	ug/kg	11.0	2.1	1	03/16/18 09:27	03/16/18 14:20	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.4	1.0	1	03/16/18 09:27	03/16/18 14:20	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV107-S-0-030718 **Lab ID: 10423366006** Collected: 03/07/18 09:40 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.75**	ug/kg	4.4	0.75	1	03/16/18 09:27	03/16/18 14:20	156-59-2	
cis-1,3-Dichloropropene	**<2.1**	ug/kg	4.4	2.1	1	03/16/18 09:27	03/16/18 14:20	10061-01-5	
m&p-Xylene	**<1.2**	ug/kg	8.8	1.2	1	03/16/18 09:27	03/16/18 14:20	179601-23-1	
o-Xylene	**<0.52**	ug/kg	4.4	0.52	1	03/16/18 09:27	03/16/18 14:20	95-47-6	
trans-1,2-Dichloroethene	**<0.77**	ug/kg	4.4	0.77	1	03/16/18 09:27	03/16/18 14:20	156-60-5	
trans-1,3-Dichloropropene	**<0.80**	ug/kg	4.4	0.80	1	03/16/18 09:27	03/16/18 14:20	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	74	%.	75-126		1	03/16/18 09:27	03/16/18 14:20	17060-07-0	S1
Toluene-d8 (S)	106	%.	75-125		1	03/16/18 09:27	03/16/18 14:20	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-128		1	03/16/18 09:27	03/16/18 14:20	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV105-S-3-030718 **Lab ID: 10423366007** Collected: 03/07/18 10:30 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.2**	%	0.10	0.10	1		03/15/18 12:16		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.79**	ug/kg	4.2	0.79	1	03/16/18 09:27	03/16/18 16:08	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.57**	ug/kg	4.2	0.57	1	03/16/18 09:27	03/16/18 16:08	79-34-5	
1,1,2-Trichloroethane	**<0.73**	ug/kg	4.2	0.73	1	03/16/18 09:27	03/16/18 16:08	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.76**	ug/kg	4.2	0.76	1	03/16/18 09:27	03/16/18 16:08	76-13-1	
1,1-Dichloroethane	**<0.76**	ug/kg	4.2	0.76	1	03/16/18 09:27	03/16/18 16:08	75-34-3	
1,1-Dichloroethene	**<0.60**	ug/kg	4.2	0.60	1	03/16/18 09:27	03/16/18 16:08	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.2	1.7	1	03/16/18 09:27	03/16/18 16:08	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/kg	4.2	0.20	1	03/16/18 09:27	03/16/18 16:08	95-63-6	
1,2-Dibromoethane (EDB)	**<0.83**	ug/kg	4.2	0.83	1	03/16/18 09:27	03/16/18 16:08	106-93-4	
1,2-Dichlorobenzene	**<0.66**	ug/kg	4.2	0.66	1	03/16/18 09:27	03/16/18 16:08	95-50-1	
1,2-Dichloroethane	**<0.75**	ug/kg	4.2	0.75	1	03/16/18 09:27	03/16/18 16:08	107-06-2	
1,3,5-Trimethylbenzene	**<0.51**	ug/kg	4.2	0.51	1	03/16/18 09:27	03/16/18 16:08	108-67-8	
1,3-Dichlorobenzene	**<0.55**	ug/kg	4.2	0.55	1	03/16/18 09:27	03/16/18 16:08	541-73-1	
1,4-Dichlorobenzene	**<0.61**	ug/kg	4.2	0.61	1	03/16/18 09:27	03/16/18 16:08	106-46-7	
2-Butanone (MEK)	**<3.2**	ug/kg	21.1	3.2	1	03/16/18 09:27	03/16/18 16:08	78-93-3	
2-Hexanone	**<2.4**	ug/kg	21.1	2.4	1	03/16/18 09:27	03/16/18 16:08	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.7**	ug/kg	21.1	2.7	1	03/16/18 09:27	03/16/18 16:08	108-10-1	
Acetone	**<8.8**	ug/kg	52.7	8.8	1	03/16/18 09:27	03/16/18 16:08	67-64-1	
Benzene	**<0.58**	ug/kg	4.2	0.58	1	03/16/18 09:27	03/16/18 16:08	71-43-2	
Bromodichloromethane	**<0.66**	ug/kg	4.2	0.66	1	03/16/18 09:27	03/16/18 16:08	75-27-4	
Bromoform	**<2.7**	ug/kg	21.1	2.7	1	03/16/18 09:27	03/16/18 16:08	75-25-2	
Bromomethane	**<3.7**	ug/kg	21.1	3.7	1	03/16/18 09:27	03/16/18 16:08	74-83-9	
Carbon tetrachloride	**<0.59**	ug/kg	4.2	0.59	1	03/16/18 09:27	03/16/18 16:08	56-23-5	
Chlorobenzene	**<0.63**	ug/kg	4.2	0.63	1	03/16/18 09:27	03/16/18 16:08	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.5	1.6	1	03/16/18 09:27	03/16/18 16:08	75-00-3	
Chloroform	**<0.83**	ug/kg	4.2	0.83	1	03/16/18 09:27	03/16/18 16:08	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.5	1.9	1	03/16/18 09:27	03/16/18 16:08	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.2	0.22	1	03/16/18 09:27	03/16/18 16:08	124-48-1	
Dichlorodifluoromethane	**<4.0**	ug/kg	10.5	4.0	1	03/16/18 09:27	03/16/18 16:08	75-71-8	
Ethylbenzene	**<0.77**	ug/kg	4.2	0.77	1	03/16/18 09:27	03/16/18 16:08	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.5	2.8	1	03/16/18 09:27	03/16/18 16:08	87-68-3	
Methyl-tert-butyl ether	**<0.63**	ug/kg	4.2	0.63	1	03/16/18 09:27	03/16/18 16:08	1634-04-4	
Methylene Chloride	**<2.4**	ug/kg	21.1	2.4	1	03/16/18 09:27	03/16/18 16:08	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.5	1.5	1	03/16/18 09:27	03/16/18 16:08	91-20-3	
Styrene	**<0.45**	ug/kg	4.2	0.45	1	03/16/18 09:27	03/16/18 16:08	100-42-5	
Tetrachloroethene	**<0.55**	ug/kg	4.2	0.55	1	03/16/18 09:27	03/16/18 16:08	127-18-4	
Tetrahydrofuran	**<9.6**	ug/kg	42.2	9.6	1	03/16/18 09:27	03/16/18 16:08	109-99-9	
Toluene	**<1.2**	ug/kg	4.2	1.2	1	03/16/18 09:27	03/16/18 16:08	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.2	0.12	1	03/16/18 09:27	03/16/18 16:08	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.5	1.8	1	03/16/18 09:27	03/16/18 16:08	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.5	2.0	1	03/16/18 09:27	03/16/18 16:08	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.2	1.0	1	03/16/18 09:27	03/16/18 16:08	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV105-S-3-030718 **Lab ID: 10423366007** Collected: 03/07/18 10:30 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.72**	ug/kg	4.2	0.72	1	03/16/18 09:27	03/16/18 16:08	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.2	2.0	1	03/16/18 09:27	03/16/18 16:08	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.4	1.1	1	03/16/18 09:27	03/16/18 16:08	179601-23-1	
o-Xylene	**<0.51**	ug/kg	4.2	0.51	1	03/16/18 09:27	03/16/18 16:08	95-47-6	
trans-1,2-Dichloroethene	**<0.75**	ug/kg	4.2	0.75	1	03/16/18 09:27	03/16/18 16:08	156-60-5	
trans-1,3-Dichloropropene	**<0.77**	ug/kg	4.2	0.77	1	03/16/18 09:27	03/16/18 16:08	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-126		1	03/16/18 09:27	03/16/18 16:08	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	03/16/18 09:27	03/16/18 16:08	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	03/16/18 09:27	03/16/18 16:08	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV107-S-2-030718 **Lab ID: 10423366008** Collected: 03/07/18 10:00 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.6**	%	0.10	0.10	1		03/15/18 12:16		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.67**	ug/kg	3.6	0.67	1	03/16/18 09:27	03/16/18 15:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.49**	ug/kg	3.6	0.49	1	03/16/18 09:27	03/16/18 15:12	79-34-5	
1,1,2-Trichloroethane	**<0.62**	ug/kg	3.6	0.62	1	03/16/18 09:27	03/16/18 15:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.65**	ug/kg	3.6	0.65	1	03/16/18 09:27	03/16/18 15:12	76-13-1	
1,1-Dichloroethane	**<0.64**	ug/kg	3.6	0.64	1	03/16/18 09:27	03/16/18 15:12	75-34-3	
1,1-Dichloroethene	**<0.51**	ug/kg	3.6	0.51	1	03/16/18 09:27	03/16/18 15:12	75-35-4	
1,2,4-Trichlorobenzene	**<1.4**	ug/kg	3.6	1.4	1	03/16/18 09:27	03/16/18 15:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.17**	ug/kg	3.6	0.17	1	03/16/18 09:27	03/16/18 15:12	95-63-6	
1,2-Dibromoethane (EDB)	**<0.70**	ug/kg	3.6	0.70	1	03/16/18 09:27	03/16/18 15:12	106-93-4	
1,2-Dichlorobenzene	**<0.57**	ug/kg	3.6	0.57	1	03/16/18 09:27	03/16/18 15:12	95-50-1	
1,2-Dichloroethane	**<0.63**	ug/kg	3.6	0.63	1	03/16/18 09:27	03/16/18 15:12	107-06-2	
1,3,5-Trimethylbenzene	**<0.43**	ug/kg	3.6	0.43	1	03/16/18 09:27	03/16/18 15:12	108-67-8	
1,3-Dichlorobenzene	**<0.47**	ug/kg	3.6	0.47	1	03/16/18 09:27	03/16/18 15:12	541-73-1	
1,4-Dichlorobenzene	**<0.52**	ug/kg	3.6	0.52	1	03/16/18 09:27	03/16/18 15:12	106-46-7	
2-Butanone (MEK)	**<2.8**	ug/kg	18.0	2.8	1	03/16/18 09:27	03/16/18 15:12	78-93-3	
2-Hexanone	**<2.1**	ug/kg	18.0	2.1	1	03/16/18 09:27	03/16/18 15:12	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.3**	ug/kg	18.0	2.3	1	03/16/18 09:27	03/16/18 15:12	108-10-1	
Acetone	**<7.5**	ug/kg	44.9	7.5	1	03/16/18 09:27	03/16/18 15:12	67-64-1	
Benzene	**<0.50**	ug/kg	3.6	0.50	1	03/16/18 09:27	03/16/18 15:12	71-43-2	
Bromodichloromethane	**<0.57**	ug/kg	3.6	0.57	1	03/16/18 09:27	03/16/18 15:12	75-27-4	
Bromoform	**<2.3**	ug/kg	18.0	2.3	1	03/16/18 09:27	03/16/18 15:12	75-25-2	
Bromomethane	**<3.1**	ug/kg	18.0	3.1	1	03/16/18 09:27	03/16/18 15:12	74-83-9	
Carbon tetrachloride	**1.7J**	ug/kg	3.6	0.50	1	03/16/18 09:27	03/16/18 15:12	56-23-5	
Chlorobenzene	**<0.54**	ug/kg	3.6	0.54	1	03/16/18 09:27	03/16/18 15:12	108-90-7	
Chloroethane	**<1.4**	ug/kg	9.0	1.4	1	03/16/18 09:27	03/16/18 15:12	75-00-3	
Chloroform	**1.1J**	ug/kg	3.6	0.70	1	03/16/18 09:27	03/16/18 15:12	67-66-3	
Chloromethane	**<1.6**	ug/kg	9.0	1.6	1	03/16/18 09:27	03/16/18 15:12	74-87-3	
Dibromochloromethane	**<0.18**	ug/kg	3.6	0.18	1	03/16/18 09:27	03/16/18 15:12	124-48-1	
Dichlorodifluoromethane	**<3.4**	ug/kg	9.0	3.4	1	03/16/18 09:27	03/16/18 15:12	75-71-8	
Ethylbenzene	**<0.66**	ug/kg	3.6	0.66	1	03/16/18 09:27	03/16/18 15:12	100-41-4	
Hexachloro-1,3-butadiene	**<2.3**	ug/kg	9.0	2.3	1	03/16/18 09:27	03/16/18 15:12	87-68-3	
Methyl-tert-butyl ether	**<0.53**	ug/kg	3.6	0.53	1	03/16/18 09:27	03/16/18 15:12	1634-04-4	
Methylene Chloride	**<2.0**	ug/kg	18.0	2.0	1	03/16/18 09:27	03/16/18 15:12	75-09-2	
Naphthalene	**<1.3**	ug/kg	9.0	1.3	1	03/16/18 09:27	03/16/18 15:12	91-20-3	
Styrene	**<0.38**	ug/kg	3.6	0.38	1	03/16/18 09:27	03/16/18 15:12	100-42-5	
Tetrachloroethene	**<0.47**	ug/kg	3.6	0.47	1	03/16/18 09:27	03/16/18 15:12	127-18-4	
Tetrahydrofuran	**<8.2**	ug/kg	35.9	8.2	1	03/16/18 09:27	03/16/18 15:12	109-99-9	
Toluene	**<0.99**	ug/kg	3.6	0.99	1	03/16/18 09:27	03/16/18 15:12	108-88-3	
Trichloroethene	**<0.10**	ug/kg	3.6	0.10	1	03/16/18 09:27	03/16/18 15:12	79-01-6	
Trichlorofluoromethane	**<1.5**	ug/kg	9.0	1.5	1	03/16/18 09:27	03/16/18 15:12	75-69-4	
Vinyl acetate	**<1.7**	ug/kg	9.0	1.7	1	03/16/18 09:27	03/16/18 15:12	108-05-4	
Vinyl chloride	**<0.85**	ug/kg	3.6	0.85	1	03/16/18 09:27	03/16/18 15:12	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Sample: SV107-S-2-030718 **Lab ID: 10423366008** Collected: 03/07/18 10:00 Received: 03/13/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.61**	ug/kg	3.6	0.61	1	03/16/18 09:27	03/16/18 15:12	156-59-2	
cis-1,3-Dichloropropene	**<1.7**	ug/kg	3.6	1.7	1	03/16/18 09:27	03/16/18 15:12	10061-01-5	
m&p-Xylene	**<0.94**	ug/kg	7.2	0.94	1	03/16/18 09:27	03/16/18 15:12	179601-23-1	
o-Xylene	**<0.43**	ug/kg	3.6	0.43	1	03/16/18 09:27	03/16/18 15:12	95-47-6	
trans-1,2-Dichloroethene	**<0.63**	ug/kg	3.6	0.63	1	03/16/18 09:27	03/16/18 15:12	156-60-5	
trans-1,3-Dichloropropene	**<0.66**	ug/kg	3.6	0.66	1	03/16/18 09:27	03/16/18 15:12	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	81	%.	75-126		1	03/16/18 09:27	03/16/18 15:12	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	03/16/18 09:27	03/16/18 15:12	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-128		1	03/16/18 09:27	03/16/18 15:12	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

QC Batch: 527452 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10423366001, 10423366002, 10423366003

SAMPLE DUPLICATE: 2861482

Parameter	Units	10423815001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.9	22.8	5	30	

SAMPLE DUPLICATE: 2861483

Parameter	Units	10423366003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.2	21.6	7	30	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

QC Batch: 527503 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10423366004, 10423366005, 10423366006, 10423366007, 10423366008

SAMPLE DUPLICATE: 2861678

Parameter	Units	10423366004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.6	24.5	8	30	

SAMPLE DUPLICATE: 2861679

Parameter	Units	10423607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.8	16.9	5	30	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

QC Batch: 527317 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10423366001, 10423366002, 10423366003, 10423366004, 10423366005, 10423366006, 10423366007, 10423366008

METHOD BLANK: 2860622 Matrix: Solid
Associated Lab Samples: 10423366001, 10423366002, 10423366003, 10423366004, 10423366005, 10423366006, 10423366007, 10423366008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	03/16/18 11:49	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	03/16/18 11:49	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	03/16/18 11:49	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	03/16/18 11:49	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	03/16/18 11:49	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	03/16/18 11:49	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	03/16/18 11:49	
1,2,4-Trimethylbenzene	ug/kg	<0.19	4.0	0.19	03/16/18 11:49	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	03/16/18 11:49	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	03/16/18 11:49	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	03/16/18 11:49	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	03/16/18 11:49	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	03/16/18 11:49	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	03/16/18 11:49	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	03/16/18 11:49	
2-Hexanone	ug/kg	<2.3	20.0	2.3	03/16/18 11:49	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	03/16/18 11:49	
Acetone	ug/kg	<8.3	50.0	8.3	03/16/18 11:49	MN
Benzene	ug/kg	<0.55	4.0	0.55	03/16/18 11:49	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	03/16/18 11:49	
Bromoform	ug/kg	<2.6	20.0	2.6	03/16/18 11:49	
Bromomethane	ug/kg	<3.5	20.0	3.5	03/16/18 11:49	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	03/16/18 11:49	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	03/16/18 11:49	
Chloroethane	ug/kg	<1.6	10.0	1.6	03/16/18 11:49	
Chloroform	ug/kg	<0.78	4.0	0.78	03/16/18 11:49	
Chloromethane	ug/kg	<1.8	10.0	1.8	03/16/18 11:49	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	03/16/18 11:49	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	03/16/18 11:49	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	03/16/18 11:49	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	03/16/18 11:49	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	03/16/18 11:49	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	03/16/18 11:49	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	03/16/18 11:49	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	03/16/18 11:49	
Methylene Chloride	ug/kg	<2.3	20.0	2.3	03/16/18 11:49	
Naphthalene	ug/kg	<1.4	10.0	1.4	03/16/18 11:49	
o-Xylene	ug/kg	<0.48	4.0	0.48	03/16/18 11:49	
Styrene	ug/kg	<0.42	4.0	0.42	03/16/18 11:49	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	03/16/18 11:49	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

METHOD BLANK: 2860622 Matrix: Solid

Associated Lab Samples: 10423366001, 10423366002, 10423366003, 10423366004, 10423366005, 10423366006, 10423366007, 10423366008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	03/16/18 11:49	
Toluene	ug/kg	<1.1	4.0	1.1	03/16/18 11:49	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	03/16/18 11:49	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	03/16/18 11:49	
Trichloroethene	ug/kg	<0.11	4.0	0.11	03/16/18 11:49	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	03/16/18 11:49	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	03/16/18 11:49	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	03/16/18 11:49	
1,2-Dichloroethane-d4 (S)	%.	96	75-126		03/16/18 11:49	
4-Bromofluorobenzene (S)	%.	102	75-128		03/16/18 11:49	
Toluene-d8 (S)	%.	100	75-125		03/16/18 11:49	

LABORATORY CONTROL SAMPLE & LCSD: 2860623 2860624

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	19.9	18.4	100	92	75-125	8	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	20.0	19.4	100	97	67-125	3	20	
1,1,2-Trichloroethane	ug/kg	20	22.3	20.6	111	103	75-125	8	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	19.3	18.3	96	92	70-125	5	20	
1,1-Dichloroethane	ug/kg	20	19.9	18.5	99	93	70-125	7	20	
1,1-Dichloroethene	ug/kg	20	20.6	19.5	103	97	67-125	5	20	
1,2,4-Trichlorobenzene	ug/kg	20	19.3	18.7	97	93	75-125	3	20	
1,2,4-Trimethylbenzene	ug/kg	20	20.1	19.4	101	97	75-125	4	20	
1,2-Dibromoethane (EDB)	ug/kg	20	20.7	19.4	103	97	75-125	6	20	
1,2-Dichlorobenzene	ug/kg	20	20.4	19.8	102	99	75-125	3	20	
1,2-Dichloroethane	ug/kg	20	20.5	18.7	102	94	74-125	9	20	
1,3,5-Trimethylbenzene	ug/kg	20	20.0	19.5	100	98	75-125	2	20	
1,3-Dichlorobenzene	ug/kg	20	19.4	18.6	97	93	75-125	4	20	
1,4-Dichlorobenzene	ug/kg	20	19.4	19.0	97	95	75-125	2	20	
2-Butanone (MEK)	ug/kg	100	101	92.6	101	93	56-134	9	20	
2-Hexanone	ug/kg	100	105	97.5	105	97	71-125	8	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	104	98.5	104	99	71-125	5	20	
Acetone	ug/kg	100	108	93.8	108	94	30-150	14	20	
Benzene	ug/kg	20	20.0	18.6	100	93	69-125	7	20	
Bromodichloromethane	ug/kg	20	19.4	18.6	97	93	75-125	4	20	
Bromoform	ug/kg	20	20.4	19.3J	102	96	75-125		20	
Bromomethane	ug/kg	20	21.6	19.2J	108	96	67-131		20	
Carbon tetrachloride	ug/kg	20	19.9	18.9	100	95	75-125	5	20	
Chlorobenzene	ug/kg	20	20.0	19.4	100	97	75-125	3	20	
Chloroethane	ug/kg	20	22.7	21.6	114	108	63-125	5	20	
Chloroform	ug/kg	20	19.4	18.3	97	91	75-125	6	20	
Chloromethane	ug/kg	20	17.9	16.5	89	83	30-150	8	20	
cis-1,2-Dichloroethene	ug/kg	20	20.3	19.1	101	96	72-125	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

LABORATORY CONTROL SAMPLE & LCSD: 2860623 2860624

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
cis-1,3-Dichloropropene	ug/kg	20	19.2	18.5	96	92	73-125	4	20	
Dibromochloromethane	ug/kg	20	19.6	18.9	98	94	75-125	4	20	
Dichlorodifluoromethane	ug/kg	20	17.9	16.8	89	84	55-134	6	20	
Ethylbenzene	ug/kg	20	19.8	19.1	99	95	75-125	4	20	
Hexachloro-1,3-butadiene	ug/kg	20	19.7	19.1	99	95	75-125	3	20	
m&p-Xylene	ug/kg	40	40.2	38.7	101	97	75-125	4	20	
Methyl-tert-butyl ether	ug/kg	20	20.8	20.0	104	100	70-125	4	20	
Methylene Chloride	ug/kg	20	19.6J	18.6J	98	93	58-134		20	
Naphthalene	ug/kg	20	21.4	19.8	107	99	66-125	8	20	
o-Xylene	ug/kg	20	20.8	19.7	104	99	75-125	5	20	
Styrene	ug/kg	20	20.8	20.0	104	100	75-125	4	20	
Tetrachloroethene	ug/kg	20	20.6	19.6	103	98	72-125	5	20	
Tetrahydrofuran	ug/kg	200	201	196	101	98	36-146	3	20	
Toluene	ug/kg	20	19.7	18.7	98	94	75-125	5	20	
trans-1,2-Dichloroethene	ug/kg	20	20.1	19.1	101	96	69-125	5	20	
trans-1,3-Dichloropropene	ug/kg	20	19.5	19.1	98	96	75-125	2	20	
Trichloroethene	ug/kg	20	20.0	19.1	100	96	75-125	5	20	
Trichlorofluoromethane	ug/kg	20	20.8	19.2	104	96	72-127	8	20	
Vinyl acetate	ug/kg	20	20.1	19.0	100	95	69-125	6	20	
Vinyl chloride	ug/kg	20	18.3	16.9	91	85	67-127	8	20	
1,2-Dichloroethane-d4 (S)	%.				96	96	75-126			
4-Bromofluorobenzene (S)	%.				99	102	75-128			
Toluene-d8 (S)	%.				100	101	75-125			

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QUALIFIERS

Project:	1497 Subslab Soil Gas and Soil
Pace Project No.:	10423366

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 527936

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

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METHOD CROSS REFERENCE TABLE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5035 Low Level	Solid	SW-846 8260B	SW-846 5035A/5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10423366

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423366001	**SV110-S-0-030818**	ASTM D2974	527452		
10423366002	**SV110-S-3-030818**	ASTM D2974	527452		
10423366003	**SV105-S-0-030718**	ASTM D2974	527452		
10423366004	**SV106-S-0-030718**	ASTM D2974	527503		
10423366005	**SV106-S-3-030718**	ASTM D2974	527503		
10423366006	**SV107-S-0-030718**	ASTM D2974	527503		
10423366007	**SV105-S-3-030718**	ASTM D2974	527503		
10423366008	**SV107-S-2-030718**	ASTM D2974	527503		
10423366001	**SV110-S-0-030818**	EPA 5035 Low	527317	EPA 8260B	527936
10423366002	**SV110-S-3-030818**	EPA 5035 Low	527317	EPA 8260B	527936
10423366003	**SV105-S-0-030718**	EPA 5035 Low	527317	EPA 8260B	527936
10423366004	**SV106-S-0-030718**	EPA 5035 Low	527317	EPA 8260B	527936
10423366005	**SV106-S-3-030718**	EPA 5035 Low	527317	EPA 8260B	527936
10423366006	**SV107-S-0-030718**	EPA 5035 Low	527317	EPA 8260B	527936
10423366007	**SV105-S-3-030718**	EPA 5035 Low	527317	EPA 8260B	527936
10423366008	**SV107-S-2-030718**	EPA 5035 Low	527317	EPA 8260B	527936

WO#: 10423366

10423366

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Docu[ment]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be c[ompleted accurately].

Page : 1 Of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	steve.demus@ch2m.com
Phone:	509-464-7222 Fax:
Requested Due Date:	Standard 10 Day

Section B Required Project Information:

Report To:	Steve Demus
Copy To:	UPRR-Sysdat@ghd.com
Purchase Order #:	PEDD# 1497
Project Name:	Subslab Soil Gas and Soil Sampling
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company Name:	UPRR
Address:	1400 W. 52nd Avenue, Denver,CO 80221
Contract #	758939
Pace Project Manager:	jennifer.gross@pacelabs.com,
Pace Profile #:	36447 / 3

Regulatory Agency:

State / Location: WA / Spokane

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	8260 Full List	Dry Weight	Residual Chlorine (Y/N)	
1	SV110-S-0-030818	SL	G			3/8/18	1250		5	X					X	X			X	X		001
2	SV110-S-3-030818	SL	G			3/8/18	1300		5	X					X	X			X	X		002
3	SV105-S-0-030718	SL	G			3/7/18	0920		5	X					X	X			X	X		003
4	SV106-S-0-030718	SL	G			3/7/18	0930		5	X					X	X			X	X		004
5	SV106-S-3-030718	SL	G			3/7/18	1010		5	X					X	X			X	X		005
6	SV107-S-0-030718	SL	G			3/7/18	0940		5	X					X	X			X	X		006
7	SV105-S-3-030718	SL	G			3/7/18	1030		5	X					X	X			X	X		007
8	SV107-S-2-030718	SL	G			3/7/18	1000		5	X					X	X			X	X		008
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / CH2M	3/12/18	1201	[signature] Pace	3/13/18	1000	2.8	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

BC# 36447

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steve Demus

SIGNATURE of SAMPLER: [signature] on behalf of Steve Dmus

DATE Signed: 3-12-18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M HILL

Project #:

WO# : 10423366

PM: JMG Due Date: 03/27/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4249 3595 8730

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: PB, Foam **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.8 **Cooler Temp Corrected (°C):** 2.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** Tmult **Date and Initials of Person Examining Contents:** CT 3/13/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No		12. BAG CONTAINING SAMPLES CONTAINERS ONLY LABELED - NO LABEL ON ANY CONTAINER
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: ~~VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin.~~ CT 3/13/18 Per method, VOA pH is checked after analysis	~~☒ Yes~~ CT 3/13/18	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1340	Temp: 2.8	Corrected Temp: 2.8
Time: 1350	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/13/18

Note: Whenever there is a discrepancy affecting North Carolina complianc form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 23, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423463

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423463001	**MW16D-GW-031218**	Water	03/12/18 17:50	03/14/18 10:15
10423463002	**MW4D-GW-031218**	Water	03/12/18 13:00	03/14/18 10:15
10423463003	**MW6U-GW-031218**	Water	03/12/18 10:35	03/14/18 10:15
10423463004	**MW18D-GW-031218**	Water	03/12/18 17:05	03/14/18 10:15
10423463005	**MW6D-GW-031218**	Water	03/12/18 11:30	03/14/18 10:15
10423463006	**MW15D-GW-031218**	Water	03/12/18 15:35	03/14/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423463001	**MW16D-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423463002	**MW4D-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423463003	**MW6U-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423463004	**MW18D-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423463005	**MW6D-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423463006	**MW15D-GW-031218**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423463001	**MW16D-GW-031218**					
RSK 175	Methane	3.0J	ug/L	10.0	03/19/18 08:22	
EPA 6010D	Barium, Dissolved	59.5	ug/L	10.0	03/21/18 13:47	
EPA 6010D	Calcium, Dissolved	63500	ug/L	500	03/21/18 13:47	
EPA 6010D	Chromium, Dissolved	0.63J	ug/L	10.0	03/21/18 13:47	
EPA 6010D	Cobalt, Dissolved	1.1J	ug/L	10.0	03/21/18 13:47	
EPA 6010D	Iron, Dissolved	18.5J	ug/L	50.0	03/21/18 13:47	
EPA 6010D	Magnesium, Dissolved	18900	ug/L	500	03/21/18 13:47	
EPA 6010D	Manganese, Dissolved	0.65J	ug/L	5.0	03/21/18 13:47	
EPA 6010D	Potassium, Dissolved	1510J	ug/L	2500	03/21/18 13:47	
EPA 6010D	Sodium, Dissolved	18300	ug/L	1000	03/21/18 13:47	
EPA 6010D	Vanadium, Dissolved	9.5J	ug/L	15.0	03/21/18 13:47	
SM 2320B	Alkalinity, Total as CaCO3	223	mg/L	5.0	03/20/18 10:23	
SM 2540C	Total Dissolved Solids	347	mg/L	10.0	03/19/18 12:57	
EPA 300.0	Chloride	7.3	mg/L	1.2	03/14/18 14:42	
EPA 300.0	Nitrate as N	6.4	mg/L	0.10	03/14/18 14:42	
EPA 300.0	Sulfate	24.7	mg/L	1.2	03/14/18 14:42	
EPA 353.2	Nitrogen, NO2 plus NO3	6.8	mg/L	0.20	03/16/18 15:20	
EPA 410.4	Chemical Oxygen Demand	30.8J	mg/L	50.0	03/19/18 14:13	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	03/20/18 16:56	
10423463002	**MW4D-GW-031218**					
RSK 175	Methane	3.4J	ug/L	10.0	03/19/18 08:37	
EPA 6010D	Aluminum, Dissolved	1650	ug/L	200	03/21/18 14:01	
EPA 6010D	Barium, Dissolved	89.1	ug/L	10.0	03/21/18 14:01	
EPA 6010D	Calcium, Dissolved	38100	ug/L	500	03/21/18 14:01	
EPA 6010D	Chromium, Dissolved	40.7	ug/L	10.0	03/21/18 14:01	
EPA 6010D	Cobalt, Dissolved	3.0J	ug/L	10.0	03/21/18 14:01	
EPA 6010D	Copper, Dissolved	2.5J	ug/L	10.0	03/21/18 14:01	
EPA 6010D	Iron, Dissolved	2830	ug/L	50.0	03/21/18 14:01	
EPA 6010D	Magnesium, Dissolved	11500	ug/L	500	03/21/18 14:01	
EPA 6010D	Manganese, Dissolved	28.2	ug/L	5.0	03/21/18 14:01	
EPA 6010D	Nickel, Dissolved	48.4	ug/L	20.0	03/21/18 14:01	
EPA 6010D	Potassium, Dissolved	3540	ug/L	2500	03/21/18 14:01	
EPA 6010D	Sodium, Dissolved	31400	ug/L	1000	03/21/18 14:01	
EPA 6010D	Vanadium, Dissolved	13.8J	ug/L	15.0	03/21/18 14:01	
EPA 6010D	Zinc, Dissolved	17.2J	ug/L	20.0	03/21/18 14:01	
SM 2320B	Alkalinity, Total as CaCO3	131	mg/L	5.0	03/20/18 10:27	
SM 2540C	Total Dissolved Solids	287	mg/L	10.0	03/19/18 12:57	
SM 4500-S-2 D	Sulfide, Total	0.028	mg/L	0.020	03/16/18 13:31	
EPA 300.0	Chloride	53.8	mg/L	1.2	03/14/18 12:24	
EPA 300.0	Nitrate as N	0.84	mg/L	0.10	03/14/18 12:24	
EPA 300.0	Sulfate	10.9	mg/L	1.2	03/14/18 12:24	
EPA 353.2	Nitrogen, NO2 plus NO3	0.73	mg/L	0.020	03/16/18 14:31	
EPA 410.4	Chemical Oxygen Demand	24.6J	mg/L	50.0	03/19/18 14:14	
SM 5310C	Total Organic Carbon	2.5	mg/L	1.0	03/20/18 17:10	
10423463003	**MW6U-GW-031218**					
RSK 175	Methane	3.0J	ug/L	10.0	03/19/18 08:44	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423463003	**MW6U-GW-031218**					
EPA 6010D	Aluminum, Dissolved	82.4J	ug/L	200	03/21/18 14:04	
EPA 6010D	Antimony, Dissolved	3.2J	ug/L	20.0	03/21/18 14:04	
EPA 6010D	Barium, Dissolved	47.2	ug/L	10.0	03/21/18 14:04	
EPA 6010D	Calcium, Dissolved	63000	ug/L	500	03/21/18 14:04	
EPA 6010D	Copper, Dissolved	0.93J	ug/L	10.0	03/21/18 14:04	
EPA 6010D	Iron, Dissolved	91.2	ug/L	50.0	03/21/18 14:04	
EPA 6010D	Magnesium, Dissolved	19300	ug/L	500	03/21/18 14:04	
EPA 6010D	Manganese, Dissolved	4.1J	ug/L	5.0	03/21/18 14:04	
EPA 6010D	Potassium, Dissolved	1980J	ug/L	2500	03/21/18 14:04	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	03/21/18 14:04	
EPA 6010D	Vanadium, Dissolved	5.6J	ug/L	15.0	03/21/18 14:04	
EPA 6010D	Zinc, Dissolved	6.4J	ug/L	20.0	03/21/18 14:04	
EPA 7470A	Mercury, Dissolved	0.34	ug/L	0.20	03/20/18 15:13	
SM 2320B	Alkalinity, Total as CaCO3	258	mg/L	5.0	03/20/18 10:32	
SM 2540C	Total Dissolved Solids	324	mg/L	10.0	03/19/18 12:57	
EPA 300.0	Chloride	5.4	mg/L	1.2	03/14/18 12:39	
EPA 300.0	Nitrate as N	2.1	mg/L	0.10	03/14/18 12:39	H1
EPA 300.0	Sulfate	9.6	mg/L	1.2	03/14/18 12:39	
EPA 353.2	Nitrogen, NO2 plus NO3	2.0	mg/L	0.020	03/16/18 14:33	
EPA 410.4	Chemical Oxygen Demand	21.0J	mg/L	50.0	03/19/18 14:15	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	03/20/18 17:24	
10423463004	**MW18D-GW-031218**					
RSK 175	Methane	3.4J	ug/L	10.0	03/19/18 08:51	
EPA 6010D	Barium, Dissolved	50.3	ug/L	10.0	03/21/18 14:06	
EPA 6010D	Calcium, Dissolved	22300	ug/L	500	03/21/18 14:06	
EPA 6010D	Iron, Dissolved	106	ug/L	50.0	03/21/18 14:06	
EPA 6010D	Magnesium, Dissolved	15500	ug/L	500	03/21/18 14:06	
EPA 6010D	Manganese, Dissolved	45.4	ug/L	5.0	03/21/18 14:06	
EPA 6010D	Nickel, Dissolved	1.2J	ug/L	20.0	03/21/18 14:06	
EPA 6010D	Potassium, Dissolved	3800	ug/L	2500	03/21/18 14:06	
EPA 6010D	Sodium, Dissolved	19200	ug/L	1000	03/21/18 14:06	
EPA 6010D	Vanadium, Dissolved	0.53J	ug/L	15.0	03/21/18 14:06	
SM 2320B	Alkalinity, Total as CaCO3	159	mg/L	5.0	03/20/18 10:36	
SM 2540C	Total Dissolved Solids	192	mg/L	10.0	03/19/18 12:57	
EPA 300.0	Chloride	2.4	mg/L	1.2	03/14/18 14:27	
EPA 300.0	Sulfate	7.7	mg/L	1.2	03/14/18 14:27	
EPA 353.2	Nitrogen, NO2 plus NO3	0.011J	mg/L	0.020	03/16/18 14:34	
SM 5310C	Total Organic Carbon	0.48J	mg/L	1.0	03/20/18 17:38	
10423463005	**MW6D-GW-031218**					
RSK 175	Methane	3.0J	ug/L	10.0	03/19/18 08:59	
EPA 6010D	Aluminum, Dissolved	389	ug/L	200	03/21/18 14:16	
EPA 6010D	Barium, Dissolved	23.1	ug/L	10.0	03/21/18 14:16	
EPA 6010D	Calcium, Dissolved	34100	ug/L	500	03/21/18 14:16	
EPA 6010D	Chromium, Dissolved	0.59J	ug/L	10.0	03/21/18 14:16	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/21/18 14:16	
EPA 6010D	Copper, Dissolved	1.8J	ug/L	10.0	03/21/18 14:16	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423463005	**MW6D-GW-031218**					
EPA 6010D	Iron, Dissolved	547	ug/L	50.0	03/21/18 14:16	
EPA 6010D	Magnesium, Dissolved	15300	ug/L	500	03/21/18 14:16	
EPA 6010D	Manganese, Dissolved	578	ug/L	5.0	03/21/18 14:16	
EPA 6010D	Potassium, Dissolved	7180	ug/L	2500	03/21/18 14:16	
EPA 6010D	Sodium, Dissolved	18400	ug/L	1000	03/21/18 14:16	
EPA 6010D	Vanadium, Dissolved	17.8	ug/L	15.0	03/21/18 14:16	
EPA 6010D	Zinc, Dissolved	3.6J	ug/L	20.0	03/21/18 14:16	
SM 2320B	Alkalinity, Total as CaCO3	188	mg/L	5.0	03/20/18 10:40	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	03/19/18 12:57	
EPA 300.0	Chloride	3.3	mg/L	1.2	03/14/18 12:54	
EPA 300.0	Nitrate as N	0.54	mg/L	0.10	03/14/18 12:54	H1
EPA 300.0	Sulfate	5.3	mg/L	1.2	03/14/18 12:54	
EPA 353.2	Nitrogen, NO2 plus NO3	0.59	mg/L	0.020	03/16/18 14:35	
SM 5310C	Total Organic Carbon	0.53J	mg/L	1.0	03/20/18 17:52	
10423463006	**MW15D-GW-031218**					
RSK 175	Methane	3.6J	ug/L	10.0	03/19/18 09:06	
EPA 6010D	Aluminum, Dissolved	26.8J	ug/L	200	03/21/18 14:18	
EPA 6010D	Antimony, Dissolved	3.5J	ug/L	20.0	03/21/18 14:18	
EPA 6010D	Barium, Dissolved	10.9	ug/L	10.0	03/21/18 14:18	
EPA 6010D	Calcium, Dissolved	39100	ug/L	500	03/21/18 14:18	
EPA 6010D	Iron, Dissolved	38.0J	ug/L	50.0	03/21/18 14:18	
EPA 6010D	Magnesium, Dissolved	14600	ug/L	500	03/21/18 14:18	
EPA 6010D	Manganese, Dissolved	3.4J	ug/L	5.0	03/21/18 14:18	
EPA 6010D	Potassium, Dissolved	2750	ug/L	2500	03/21/18 14:18	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	03/21/18 14:18	
EPA 6010D	Vanadium, Dissolved	10.4J	ug/L	15.0	03/21/18 14:18	
SM 2320B	Alkalinity, Total as CaCO3	176	mg/L	5.0	03/20/18 10:44	
SM 2540C	Total Dissolved Solids	243	mg/L	10.0	03/19/18 12:57	
EPA 300.0	Chloride	3.0	mg/L	1.2	03/14/18 14:12	
EPA 300.0	Nitrate as N	2.0	mg/L	0.10	03/14/18 14:12	
EPA 300.0	Sulfate	6.3	mg/L	1.2	03/14/18 14:12	
EPA 353.2	Nitrogen, NO2 plus NO3	1.9	mg/L	0.020	03/16/18 14:36	
SM 5310C	Total Organic Carbon	0.60J	mg/L	1.0	03/20/18 18:06	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423463

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423463

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423463

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 104368

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2072534001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 449689)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- MW6D-GW-031218 (Lab ID: 10423463005)
- MW6U-GW-031218 (Lab ID: 10423463003)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527480

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10423463006,10423642001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2862703)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 527480

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2861570)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2861571)
  - Nitrogen, NO2 plus NO3

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423463

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 23, 2018

General Information:
6 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW16D-GW-031218 **Lab ID: 10423463001** Collected: 03/12/18 17:50 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 08:22	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 08:22	74-85-1	
Methane	**3.0J**	ug/L	10.0	1.1	1		03/19/18 08:22	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 13:47	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 13:47	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 13:47	7440-38-2	
Barium, Dissolved	**59.5**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 13:47	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 13:47	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 13:47	7440-43-9	
Calcium, Dissolved	**63500**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 13:47	7440-70-2	
Chromium, Dissolved	**0.63J**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 13:47	7440-47-3	
Cobalt, Dissolved	**1.1J**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 13:47	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 13:47	7440-50-8	
Iron, Dissolved	**18.5J**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 13:47	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 13:47	7439-92-1	
Magnesium, Dissolved	**18900**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 13:47	7439-95-4	
Manganese, Dissolved	**0.65J**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 13:47	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 13:47	7440-02-0	
Potassium, Dissolved	**1510J**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 13:47	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 13:47	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 13:47	7440-22-4	
Sodium, Dissolved	**18300**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 13:47	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 13:47	7440-28-0	
Vanadium, Dissolved	**9.5J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 13:47	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 13:47	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:04	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**223**	mg/L	5.0	1.4	1		03/20/18 10:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**347**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/16/18 13:30	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.3**	mg/L	1.2	0.14	1		03/14/18 14:42	16887-00-6	
Nitrate as N	**6.4**	mg/L	0.10	0.0079	1		03/14/18 14:42	14797-55-8	
Sulfate	**24.7**	mg/L	1.2	0.27	1		03/14/18 14:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW16D-GW-031218 **Lab ID: 10423463001** Collected: 03/12/18 17:50 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**6.8**	mg/L	0.20	0.075	10		03/16/18 15:20		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**30.8J**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		03/20/18 16:56	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW4D-GW-031218 **Lab ID: 10423463002** Collected: 03/12/18 13:00 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 08:37	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 08:37	74-85-1	
Methane	**3.4J**	ug/L	10.0	1.1	1		03/19/18 08:37	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**1650**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:01	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:01	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:01	7440-38-2	
Barium, Dissolved	**89.1**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:01	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:01	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:01	7440-43-9	
Calcium, Dissolved	**38100**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:01	7440-70-2	
Chromium, Dissolved	**40.7**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:01	7440-47-3	
Cobalt, Dissolved	**3.0J**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:01	7440-48-4	
Copper, Dissolved	**2.5J**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:01	7440-50-8	
Iron, Dissolved	**2830**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:01	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:01	7439-92-1	
Magnesium, Dissolved	**11500**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:01	7439-95-4	
Manganese, Dissolved	**28.2**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:01	7439-96-5	
Nickel, Dissolved	**48.4**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:01	7440-02-0	
Potassium, Dissolved	**3540**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:01	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:01	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:01	7440-22-4	
Sodium, Dissolved	**31400**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:01	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:01	7440-28-0	
Vanadium, Dissolved	**13.8J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:01	7440-62-2	
Zinc, Dissolved	**17.2J**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:01	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:06	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**131**	mg/L	5.0	1.4	1		03/20/18 10:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**287**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.028**	mg/L	0.020	0.0050	1		03/16/18 13:31	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**53.8**	mg/L	1.2	0.14	1		03/14/18 12:24	16887-00-6	
Nitrate as N	**0.84**	mg/L	0.10	0.0079	1		03/14/18 12:24	14797-55-8	
Sulfate	**10.9**	mg/L	1.2	0.27	1		03/14/18 12:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW4D-GW-031218 **Lab ID: 10423463002** Collected: 03/12/18 13:00 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.73**	mg/L	0.020	0.0075	1		03/16/18 14:31		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**24.6J**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:14		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.5**	mg/L	1.0	0.20	1		03/20/18 17:10	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW6U-GW-031218 **Lab ID: 10423463003** Collected: 03/12/18 10:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 08:44	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 08:44	74-85-1	
Methane	**3.0J**	ug/L	10.0	1.1	1		03/19/18 08:44	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**82.4J**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:04	7429-90-5	
Antimony, Dissolved	**3.2J**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:04	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:04	7440-38-2	
Barium, Dissolved	**47.2**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:04	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:04	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:04	7440-43-9	
Calcium, Dissolved	**63000**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:04	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:04	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:04	7440-48-4	
Copper, Dissolved	**0.93J**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:04	7440-50-8	
Iron, Dissolved	**91.2**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:04	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:04	7439-92-1	
Magnesium, Dissolved	**19300**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:04	7439-95-4	
Manganese, Dissolved	**4.1J**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:04	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:04	7440-02-0	
Potassium, Dissolved	**1980J**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:04	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:04	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:04	7440-22-4	
Sodium, Dissolved	**15600**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:04	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:04	7440-28-0	
Vanadium, Dissolved	**5.6J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:04	7440-62-2	
Zinc, Dissolved	**6.4J**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:04	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.34**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:13	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**258**	mg/L	5.0	1.4	1		03/20/18 10:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**324**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/16/18 13:33	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.4**	mg/L	1.2	0.14	1		03/14/18 12:39	16887-00-6	
Nitrate as N	**2.1**	mg/L	0.10	0.0079	1		03/14/18 12:39	14797-55-8	H1
Sulfate	**9.6**	mg/L	1.2	0.27	1		03/14/18 12:39	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW6U-GW-031218 **Lab ID: 10423463003** Collected: 03/12/18 10:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.0**	mg/L	0.020	0.0075	1		03/16/18 14:33		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**21.0J**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:15		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.20	1		03/20/18 17:24	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW18D-GW-031218 **Lab ID: 10423463004** Collected: 03/12/18 17:05 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 08:51	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 08:51	74-85-1	
Methane	**3.4J**	ug/L	10.0	1.1	1		03/19/18 08:51	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:06	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:06	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:06	7440-38-2	
Barium, Dissolved	**50.3**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:06	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:06	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:06	7440-43-9	
Calcium, Dissolved	**22300**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:06	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:06	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:06	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:06	7440-50-8	
Iron, Dissolved	**106**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:06	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:06	7439-92-1	
Magnesium, Dissolved	**15500**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:06	7439-95-4	
Manganese, Dissolved	**45.4**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:06	7439-96-5	
Nickel, Dissolved	**1.2J**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:06	7440-02-0	
Potassium, Dissolved	**3800**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:06	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:06	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:06	7440-22-4	
Sodium, Dissolved	**19200**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:06	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:06	7440-28-0	
Vanadium, Dissolved	**0.53J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:06	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:06	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:15	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**159**	mg/L	5.0	1.4	1		03/20/18 10:36		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**192**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/16/18 13:35	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.14	1		03/14/18 14:27	16887-00-6	
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		03/14/18 14:27	14797-55-8	
Sulfate	**7.7**	mg/L	1.2	0.27	1		03/14/18 14:27	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW18D-GW-031218 **Lab ID: 10423463004** Collected: 03/12/18 17:05 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.011J**	mg/L	0.020	0.0075	1		03/16/18 14:34		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.48J**	mg/L	1.0	0.20	1		03/20/18 17:38	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW6D-GW-031218 **Lab ID: 10423463005** Collected: 03/12/18 11:30 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 08:59	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 08:59	74-85-1	
Methane	**3.0J**	ug/L	10.0	1.1	1		03/19/18 08:59	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**389**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:16	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:16	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:16	7440-38-2	
Barium, Dissolved	**23.1**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:16	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:16	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:16	7440-43-9	
Calcium, Dissolved	**34100**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:16	7440-70-2	
Chromium, Dissolved	**0.59J**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:16	7440-47-3	
Cobalt, Dissolved	**1.4J**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:16	7440-48-4	
Copper, Dissolved	**1.8J**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:16	7440-50-8	
Iron, Dissolved	**547**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:16	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:16	7439-92-1	
Magnesium, Dissolved	**15300**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:16	7439-95-4	
Manganese, Dissolved	**578**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:16	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:16	7440-02-0	
Potassium, Dissolved	**7180**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:16	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:16	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:16	7440-22-4	
Sodium, Dissolved	**18400**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:16	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:16	7440-28-0	
Vanadium, Dissolved	**17.8**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:16	7440-62-2	
Zinc, Dissolved	**3.6J**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:16	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:22	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**188**	mg/L	5.0	1.4	1		03/20/18 10:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**240**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/16/18 13:36	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.2	0.14	1		03/14/18 12:54	16887-00-6	
Nitrate as N	**0.54**	mg/L	0.10	0.0079	1		03/14/18 12:54	14797-55-8	H1
Sulfate	**5.3**	mg/L	1.2	0.27	1		03/14/18 12:54	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW6D-GW-031218 **Lab ID: 10423463005** Collected: 03/12/18 11:30 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.59**	mg/L	0.020	0.0075	1		03/16/18 14:35		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.53J**	mg/L	1.0	0.20	1		03/20/18 17:52	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW15D-GW-031218 **Lab ID: 10423463006** Collected: 03/12/18 15:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 09:06	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 09:06	74-85-1	
Methane	**3.6J**	ug/L	10.0	1.1	1		03/19/18 09:06	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**26.8J**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:18	7429-90-5	
Antimony, Dissolved	**3.5J**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:18	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:18	7440-38-2	
Barium, Dissolved	**10.9**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:18	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:18	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:18	7440-43-9	
Calcium, Dissolved	**39100**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:18	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:18	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:18	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:18	7440-50-8	
Iron, Dissolved	**38.0J**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:18	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:18	7439-92-1	
Magnesium, Dissolved	**14600**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:18	7439-95-4	
Manganese, Dissolved	**3.4J**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:18	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:18	7440-02-0	
Potassium, Dissolved	**2750**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:18	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:18	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:18	7440-22-4	
Sodium, Dissolved	**15600**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:18	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:18	7440-28-0	
Vanadium, Dissolved	**10.4J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:18	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:18	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:25	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**176**	mg/L	5.0	1.4	1		03/20/18 10:44		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**243**	mg/L	10.0	5.0	1		03/19/18 12:57		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/16/18 13:37	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.0**	mg/L	1.2	0.14	1		03/14/18 14:12	16887-00-6	
Nitrate as N	**2.0**	mg/L	0.10	0.0079	1		03/14/18 14:12	14797-55-8	
Sulfate	**6.3**	mg/L	1.2	0.27	1		03/14/18 14:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Sample: MW15D-GW-031218 **Lab ID: 10423463006** Collected: 03/12/18 15:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.9**	mg/L	0.020	0.0075	1		03/16/18 14:36		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.60J**	mg/L	1.0	0.20	1		03/20/18 18:06	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527919 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2865174 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/19/18 08:14	
Ethene	ug/L	<0.68	10.0	0.68	03/19/18 08:14	
Methane	ug/L	3.6J	10.0	1.1	03/19/18 08:14	

LABORATORY CONTROL SAMPLE & LCSD: 2865175 2865176

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	3	20	
Ethene	ug/L	106	104	101	98	95	85-115	3	20	
Methane	ug/L	60.7	60.0	57.4	99	95	85-115	4	20	

SAMPLE DUPLICATE: 2865177

Parameter	Units	10423463001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	3.0J	3.1J		20	

SAMPLE DUPLICATE: 2865178

Parameter	Units	10423642003 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	4.0J	1.4J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527437   Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A   Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2861447   Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/20/18 14:59	

LABORATORY CONTROL SAMPLE: 2861448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861449   2861450

Parameter	Units	10423463002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.6	5.6	112	113	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527422 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2861387 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/21/18 13:42	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/21/18 13:42	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/21/18 13:42	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/21/18 13:42	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/21/18 13:42	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/21/18 13:42	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/21/18 13:42	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/21/18 13:42	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/21/18 13:42	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/21/18 13:42	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/21/18 13:42	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/21/18 13:42	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/21/18 13:42	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/21/18 13:42	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/21/18 13:42	
Potassium, Dissolved	ug/L	<126	2500	126	03/21/18 13:42	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/21/18 13:42	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/21/18 13:42	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/21/18 13:42	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/21/18 13:42	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/21/18 13:42	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/21/18 13:42	

LABORATORY CONTROL SAMPLE: 2861388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	108	80-120	
Antimony, Dissolved	ug/L	1000	1050	105	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1020	102	80-120	
Cadmium, Dissolved	ug/L	1000	1010	101	80-120	
Calcium, Dissolved	ug/L	20000	19900	99	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	994	99	80-120	
Iron, Dissolved	ug/L	20000	20400	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Magnesium, Dissolved	ug/L	20000	20300	102	80-120	
Manganese, Dissolved	ug/L	1000	1020	102	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

LABORATORY CONTROL SAMPLE: 2861388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	20200	101	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	494	99	80-120	
Sodium, Dissolved	ug/L	20000	19800	99	80-120	
Thallium, Dissolved	ug/L	1000	990	99	80-120	
Vanadium, Dissolved	ug/L	1000	993	99	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861389 2861390

Parameter	Units	10423463001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21700	21800	108	109	75-125	0	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1050	1040	105	104	75-125	1	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1010	1010	101	101	75-125	0	20	
Barium, Dissolved	ug/L	59.5	1000	1000	1070	1080	102	102	75-125	0	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1020	1030	102	103	75-125	0	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1010	1010	101	101	75-125	0	20	
Calcium, Dissolved	ug/L	63500	20000	20000	83900	84900	102	107	75-125	1	20	
Chromium, Dissolved	ug/L	0.63J	1000	1000	1000	1000	100	100	75-125	0	20	
Cobalt, Dissolved	ug/L	1.1J	1000	1000	989	990	99	99	75-125	0	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	1000	1000	100	100	75-125	0	20	
Iron, Dissolved	ug/L	18.5J	20000	20000	20400	20400	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1010	101	101	75-125	0	20	
Magnesium, Dissolved	ug/L	18900	20000	20000	39600	39900	103	105	75-125	1	20	
Manganese, Dissolved	ug/L	0.65J	1000	1000	1010	1010	101	101	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	982	984	98	98	75-125	0	20	
Potassium, Dissolved	ug/L	1510J	20000	20000	22600	22600	105	106	75-125	0	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1050	1030	105	103	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	495	495	99	99	75-125	0	20	
Sodium, Dissolved	ug/L	18300	20000	20000	38200	38600	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	978	981	97	98	75-125	0	20	
Vanadium, Dissolved	ug/L	9.5J	1000	1000	1000	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	<1.8	1000	1000	991	993	99	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 528093 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2866173 | Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/20/18 08:00	

LABORATORY CONTROL SAMPLE & LCSD: 2866174 2866175

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.9	42.1	107	105	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866176 2866177

Parameter	Units	10423725001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	57.7	40	40	96.4	95.8	97	95	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866178 2866179

Parameter	Units	10423311004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	117	40	40	158	157	103	102	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527921 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2865180 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/19/18 12:57	

LABORATORY CONTROL SAMPLE & LCSD: 2865181 2865182

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	986	978	99	98	80-120	1	10	

SAMPLE DUPLICATE: 2865183

Parameter	Units	10423358004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	697	700	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 104368 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 449686 | Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/16/18 13:24	

LABORATORY CONTROL SAMPLE: 449687

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 449689

Parameter	Units	2072534001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.0089J	4	75-125	M1

SAMPLE DUPLICATE: 449688

Parameter	Units	2072534001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0050		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527272 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2860477 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.14	1.2	0.14	03/14/18 15:52	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/14/18 15:52	
Sulfate	mg/L	0.42J	1.2	0.27	03/14/18 15:52	

LABORATORY CONTROL SAMPLE: 2860478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860479 2860480

Parameter	Units	10422883002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.27J	12.5	12.5	12.1	12.0	94	94	90-110	0	20	
Nitrate as N	mg/L	<0.0079	1	1	0.93	0.93	93	93	90-110	0	20	
Sulfate	mg/L	<0.27	12.5	12.5	12.3	12.3	98	99	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860481 2860482

Parameter	Units	10423352002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<0.14	12.5	12.5	12.5	12.1	100	97	90-110	3	20	
Nitrate as N	mg/L	<0.0079	1	1	0.95	0.94	95	94	90-110	1	20	
Sulfate	mg/L	0.43J	12.5	12.5	12.2	12.1	94	93	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527480 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2861568 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/16/18 14:57	

LABORATORY CONTROL SAMPLE: 2861569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861570 2861571

Parameter	Units	10423463006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.8	95	92	90-110	1	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2862702 2862703

Parameter	Units	10423642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	8.9	8.3	94	82	90-110	7	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 527947 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 2865260 | Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/19/18 14:05	

LABORATORY CONTROL SAMPLE: 2865261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865262 2865263

Parameter	Units	10423608001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<50000 ug/L	250	250	302	275	107	96	90-110	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865264 2865265

Parameter	Units	10423789001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	61.9	250	250	320	313	103	101	90-110	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

QC Batch: 138928 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

METHOD BLANK: 550466 Matrix: Water
Associated Lab Samples: 10423463001, 10423463002, 10423463003, 10423463004, 10423463005, 10423463006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/20/18 13:40	

LABORATORY CONTROL SAMPLE: 550467

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550468 550469

Parameter	Units	10423725001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	3.3	25	25	30.5	30.6	109	109	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550470 550471

Parameter	Units	10423329001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.8	25	25	28.9	29.0	108	109	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423463001	**MW16D-GW-031218**	RSK 175	527919		
10423463002	**MW4D-GW-031218**	RSK 175	527919		
10423463003	**MW6U-GW-031218**	RSK 175	527919		
10423463004	**MW18D-GW-031218**	RSK 175	527919		
10423463005	**MW6D-GW-031218**	RSK 175	527919		
10423463006	**MW15D-GW-031218**	RSK 175	527919		
10423463001	**MW16D-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463002	**MW4D-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463003	**MW6U-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463004	**MW18D-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463005	**MW6D-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463006	**MW15D-GW-031218**	EPA 3010	527422	EPA 6010D	527913
10423463001	**MW16D-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463002	**MW4D-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463003	**MW6U-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463004	**MW18D-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463005	**MW6D-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463006	**MW15D-GW-031218**	EPA 7470A	527437	EPA 7470A	527865
10423463001	**MW16D-GW-031218**	SM 2320B	528093		
10423463002	**MW4D-GW-031218**	SM 2320B	528093		
10423463003	**MW6U-GW-031218**	SM 2320B	528093		
10423463004	**MW18D-GW-031218**	SM 2320B	528093		
10423463005	**MW6D-GW-031218**	SM 2320B	528093		
10423463006	**MW15D-GW-031218**	SM 2320B	528093		
10423463001	**MW16D-GW-031218**	SM 2540C	527921		
10423463002	**MW4D-GW-031218**	SM 2540C	527921		
10423463003	**MW6U-GW-031218**	SM 2540C	527921		
10423463004	**MW18D-GW-031218**	SM 2540C	527921		
10423463005	**MW6D-GW-031218**	SM 2540C	527921		
10423463006	**MW15D-GW-031218**	SM 2540C	527921		
10423463001	**MW16D-GW-031218**	SM 4500-S-2 D	104368		
10423463002	**MW4D-GW-031218**	SM 4500-S-2 D	104368		
10423463003	**MW6U-GW-031218**	SM 4500-S-2 D	104368		
10423463004	**MW18D-GW-031218**	SM 4500-S-2 D	104368		
10423463005	**MW6D-GW-031218**	SM 4500-S-2 D	104368		
10423463006	**MW15D-GW-031218**	SM 4500-S-2 D	104368		
10423463001	**MW16D-GW-031218**	EPA 300.0	527272		
10423463002	**MW4D-GW-031218**	EPA 300.0	527272		
10423463003	**MW6U-GW-031218**	EPA 300.0	527272		
10423463004	**MW18D-GW-031218**	EPA 300.0	527272		
10423463005	**MW6D-GW-031218**	EPA 300.0	527272		
10423463006	**MW15D-GW-031218**	EPA 300.0	527272		
10423463001	**MW16D-GW-031218**	EPA 353.2	527480		
10423463002	**MW4D-GW-031218**	EPA 353.2	527480		
10423463003	**MW6U-GW-031218**	EPA 353.2	527480		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423463

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423463004	**MW18D-GW-031218**	EPA 353.2	527480		
10423463005	**MW6D-GW-031218**	EPA 353.2	527480		
10423463006	**MW15D-GW-031218**	EPA 353.2	527480		
10423463001	**MW16D-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463002	**MW4D-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463003	**MW6U-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463004	**MW18D-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463005	**MW6D-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463006	**MW15D-GW-031218**	EPA 410.4	527947	EPA 410.4	528031
10423463001	**MW16D-GW-031218**	SM 5310C	138928		
10423463002	**MW4D-GW-031218**	SM 5310C	138928		
10423463003	**MW6U-GW-031218**	SM 5310C	138928		
10423463004	**MW18D-GW-031218**	SM 5310C	138928		
10423463005	**MW6D-GW-031218**	SM 5310C	138928		
10423463006	**MW15D-GW-031218**	SM 5310C	138928		

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CHAIN-OF-CUSTODY / Analytical Request Do[cument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

WO#: 10423463

10423463

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	CH2M Hill	Report To:	Mark Ochsner, Brad Ostapkowicz	Attention:	Anne Walsh
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201	Copy To:	Steve Demus, Lindsey Baumann	Company:	UPRR
Email:		Copy To:	David Hodson, UPRR-Sysdat@ghd.com	Address:	1400 W. 52nd Ave, Denver, CO 80221
Phone:	Fax:	Purchase Order #	PEDD# 1497	Pace Quote:	Contract# 758938
Requested Due Date:	*10 Day Standard*	Project Name:	Freeman WA-Grain Handling Facility	Pace Project Manager:	Jennifer Gross
		Project #:	1497	Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	**Sulfide 4500**	Methane, Ethane, Ethene RSK175	COD 410.4	**Nitrate+Nitrite 353.2**	MS/MSD Requested		
1	MW16D-GW-031218	WT	G	3/12	1750	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			001
2	MW4D-GW-031218	↓	↓	↓	1300	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			002
3	MW6U-GW-031218	↓	↓	↓	1035	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			003
4	MW18D-GW-031218	↓	↓	↓	1705	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			004
5	MW6D-GW-031218	↓	↓	↓	1130	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			005
6	MW15D-GW-031218	↓	↓	↓	1535	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			006
7	|																												
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/13/18	1530	Mark [signature] Pace	3/14/18	1015	0.9	Y	Y	Y
*Field filtered by client										

IMG 031418

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/12/18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2m Hill

Project #: WO#:10423463

PM: JMG Due Date: 03/28/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1591

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☐ Yes ☒ No

Thermometer Used: ☒ 151401163 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 0.9 **Cooler Temp Corrected (°C):** 0.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** MD 3/14/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☒ No		8. No MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-6 1/1 1/1 1/1 2n
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1030	Temp: 0.9	Corrected Temp: 0.9
Time: 1045	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/14/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of this f]orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 2072553

2072553

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin:

Workorder: 10423463 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/14/2018 **Results Requested By:** 3/28/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	MW16D-GW-031218	PS	3/12/2018 17:50	10423463001	Water	1	X	
2	MW4D-GW-031218	PS	3/12/2018 13:00	10423463002	Water	1	X	
3	MW6U-GW-031218	PS	3/12/2018 10:35	10423463003	Water	1	X	
4	MW18D-GW-031218	PS	3/12/2018 17:05	10423463004	Water	1	X	
5	MW6D-GW-031218	PS	3/12/2018 11:30	10423463005	Water	1	X	
6	MW15D-GW-031218	PS	3/12/2018 15:35	10423463006	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	3/14/18 1525		
2	FedEx	3-15-18 1005	[signature] Pace	3-15-18 1005
3				

Comments

Cooler Temperature on Receipt 1.0 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 2072553

PM: CMM Due Date: 03/28/18

CLIENT: PASI-MINN

Pace Analytical

Sample Condition Upo

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

P

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present [see COC] **Custody Seals intact:** ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3-15-18

Temp must be measured from Temperature blank when present Comments:

Temperature Blank Present"?	☐Yes ☑No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ____________________ Date/Time: ____________

Comments/ Resolution: ____________________

WO# : 12105898

12105898

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10423463 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/14/2018 **Results Requested By:** 3/28/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	MW16D-GW-031218	PS	3/12/2018 17:50	10423463001	Water	2	X	
2	MW4D-GW-031218	PS	3/12/2018 13:00	10423463002	Water	2	X	
3	MW6U-GW-031218	PS	3/12/2018 10:35	10423463003	Water	2	X	
4	MW18D-GW-031218	PS	3/12/2018 17:05	10423463004	Water	2	X	
5	MW6D-GW-031218	PS	3/12/2018 11:30	10423463005	Water	2	X	
6	MW15D-GW-031218	PS	3/12/2018 15:35	10423463006	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[illegible] Pace	3/14/18 1700	R. Clapp	3-14-18 1845	
2	R. Clapp	3-14-18 2300	B Mathews	3/15/18 0615	
3					

Cooler Temperature on Receipt 5.5 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #: WO# : 12105898

PM: HRZ Due Date: 03/28/18

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 3.2 Cooler Temp Corrected °C: 3.5 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3-14-18 DC

Comments: BM 3/15/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Angela Loisel Date: 3/15/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 26, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423466

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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Minneapolis, MN 55414
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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423466001	**MW16D-GW-031218**	Water	03/12/18 17:50	03/14/18 10:15
10423466002	**MW4D-GW-031218**	Water	03/12/18 13:00	03/14/18 10:15
10423466003	**MW6U-GW-031218**	Water	03/12/18 10:35	03/14/18 10:15
10423466004	**MW18D-GW-031218**	Water	03/12/18 17:05	03/14/18 10:15
10423466005	**MW6D-GW-031218**	Water	03/12/18 11:30	03/14/18 10:15
10423466006	**MW15D-GW-031218**	Water	03/12/18 15:35	03/14/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423466001	**MW16D-GW-031218**	EPA 8260B	AEZ	83	PASI-M
10423466002	**MW4D-GW-031218**	EPA 8260B	AEZ	83	PASI-M
10423466003	**MW6U-GW-031218**	EPA 8260B	AEZ	83	PASI-M
10423466004	**MW18D-GW-031218**	EPA 8260B	AEZ	83	PASI-M
10423466005	**MW6D-GW-031218**	EPA 8260B	AEZ	83	PASI-M
10423466006	**MW15D-GW-031218**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423466002	**MW4D-GW-031218**					
EPA 8260B	Carbon tetrachloride	3.3	ug/L	0.50	03/21/18 17:11	
EPA 8260B	Chloroform	0.55J	ug/L	1.0	03/21/18 17:11	
10423466003	**MW6U-GW-031218**					
EPA 8260B	Carbon tetrachloride	55.7	ug/L	0.50	03/21/18 17:34	
EPA 8260B	Chloroform	2.2	ug/L	1.0	03/21/18 17:34	
10423466005	**MW6D-GW-031218**					
EPA 8260B	Carbon tetrachloride	2.4	ug/L	0.50	03/21/18 18:22	
10423466006	**MW15D-GW-031218**					
EPA 8260B	Carbon tetrachloride	9.5	ug/L	0.50	03/21/18 18:45	
EPA 8260B	Chloroform	0.48J	ug/L	1.0	03/21/18 18:45	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
6 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- MW15D-GW-031218 (Lab ID: 10423466006)
- MW16D-GW-031218 (Lab ID: 10423466001)
- MW18D-GW-031218 (Lab ID: 10423466004)
- MW4D-GW-031218 (Lab ID: 10423466002)
- MW6D-GW-031218 (Lab ID: 10423466005)
- MW6U-GW-031218 (Lab ID: 10423466003)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 528333

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 2867461)
  - Bromomethane
- LCS (Lab ID: 2867462)
  - Bromomethane
- MS (Lab ID: 2868688)
  - Bromomethane
- MSD (Lab ID: 2868689)
  - Bromomethane
- MW15D-GW-031218 (Lab ID: 10423466006)
  - Bromomethane
- MW16D-GW-031218 (Lab ID: 10423466001)
  - Bromomethane
- MW18D-GW-031218 (Lab ID: 10423466004)
  - Bromomethane
- MW4D-GW-031218 (Lab ID: 10423466002)
  - Bromomethane
- MW6D-GW-031218 (Lab ID: 10423466005)
  - Bromomethane
- MW6U-GW-031218 (Lab ID: 10423466003)
  - Bromomethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528333

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424459001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2868688)
  - Bromomethane
- MSD (Lab ID: 2868689)
  - Bromomethane

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW16D-GW-031218 **Lab ID: 10423466001** Collected: 03/12/18 17:50 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 16:47	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:47	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 16:47	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 16:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 16:47	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:47	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:47	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 16:47	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:47	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 16:47	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 16:47	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 16:47	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 16:47	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:47	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 16:47	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 16:47	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:47	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:47	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 16:47	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 16:47	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 16:47	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 16:47	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 16:47	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:47	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 16:47	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 16:47	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 16:47	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 16:47	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 16:47	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:47	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 16:47	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:47	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 16:47	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 16:47	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 16:47	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:47	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 16:47	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/21/18 16:47	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 16:47	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 16:47	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW16D-GW-031218 **Lab ID: 10423466001** Collected: 03/12/18 17:50 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 16:47	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 16:47	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 16:47	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 16:47	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 16:47	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 16:47	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 16:47	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:47	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 16:47	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 16:47	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 16:47	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 16:47	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 16:47	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 16:47	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:47	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:47	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 16:47	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:47	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:47	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 16:47	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:47	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:47	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 16:47	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:47	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 16:47	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:47	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 16:47	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		03/21/18 16:47	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		03/21/18 16:47	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/21/18 16:47	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW4D-GW-031218 **Lab ID: 10423466002** Collected: 03/12/18 13:00 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 17:11	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:11	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 17:11	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 17:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 17:11	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:11	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:11	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 17:11	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:11	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 17:11	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:11	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:11	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:11	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:11	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 17:11	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 17:11	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:11	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:11	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 17:11	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 17:11	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 17:11	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 17:11	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 17:11	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:11	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 17:11	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 17:11	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 17:11	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 17:11	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 17:11	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:11	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:11	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:11	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:11	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 17:11	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 17:11	75-15-0	
Carbon tetrachloride	**3.3**	ug/L	0.50	0.20	1		03/21/18 17:11	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 17:11	75-00-3	
Chloroform	**0.55J**	ug/L	1.0	0.46	1		03/21/18 17:11	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 17:11	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 17:11	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW4D-GW-031218 **Lab ID: 10423466002** Collected: 03/12/18 13:00 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 17:11	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 17:11	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:11	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 17:11	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 17:11	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 17:11	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 17:11	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:11	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 17:11	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:11	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 17:11	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 17:11	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 17:11	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 17:11	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:11	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:11	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 17:11	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:11	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:11	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 17:11	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:11	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:11	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 17:11	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:11	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:11	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:11	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 17:11	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/21/18 17:11	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		03/21/18 17:11	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1		03/21/18 17:11	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW6U-GW-031218 **Lab ID: 10423466003** Collected: 03/12/18 10:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 17:34	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:34	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 17:34	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 17:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 17:34	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:34	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:34	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 17:34	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:34	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 17:34	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:34	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:34	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:34	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:34	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 17:34	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 17:34	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:34	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:34	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 17:34	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 17:34	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 17:34	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 17:34	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 17:34	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:34	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 17:34	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 17:34	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 17:34	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 17:34	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 17:34	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:34	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:34	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:34	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:34	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 17:34	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 17:34	75-15-0	
Carbon tetrachloride	**55.7**	ug/L	0.50	0.20	1		03/21/18 17:34	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 17:34	75-00-3	
Chloroform	**2.2**	ug/L	1.0	0.46	1		03/21/18 17:34	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 17:34	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 17:34	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW6U-GW-031218 **Lab ID: 10423466003** Collected: 03/12/18 10:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 17:34	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 17:34	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:34	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 17:34	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 17:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 17:34	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 17:34	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:34	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 17:34	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:34	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 17:34	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 17:34	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 17:34	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 17:34	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:34	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:34	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 17:34	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:34	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:34	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 17:34	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:34	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:34	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 17:34	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:34	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:34	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:34	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 17:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 17:34	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		03/21/18 17:34	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/21/18 17:34	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW18D-GW-031218 **Lab ID: 10423466004** Collected: 03/12/18 17:05 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 17:58	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 17:58	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 17:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 17:58	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:58	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 17:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 17:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:58	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:58	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 17:58	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 17:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 17:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:58	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 17:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 17:58	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 17:58	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 17:58	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 17:58	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:58	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 17:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 17:58	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 17:58	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 17:58	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 17:58	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:58	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:58	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:58	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 17:58	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 17:58	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 17:58	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:58	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 17:58	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/21/18 17:58	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 17:58	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 17:58	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW18D-GW-031218 **Lab ID: 10423466004** Collected: 03/12/18 17:05 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 17:58	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 17:58	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 17:58	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 17:58	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 17:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 17:58	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 17:58	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 17:58	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 17:58	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 17:58	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 17:58	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 17:58	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 17:58	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 17:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 17:58	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:58	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 17:58	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 17:58	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:58	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 17:58	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:58	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 17:58	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 17:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 17:58	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 17:58	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 17:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 17:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		03/21/18 17:58	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		03/21/18 17:58	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/21/18 17:58	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW6D-GW-031218 **Lab ID: 10423466005** Collected: 03/12/18 11:30 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 18:22	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 18:22	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 18:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 18:22	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:22	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:22	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 18:22	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 18:22	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 18:22	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 18:22	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 18:22	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:22	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 18:22	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 18:22	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:22	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:22	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 18:22	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 18:22	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 18:22	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 18:22	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 18:22	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:22	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 18:22	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 18:22	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 18:22	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 18:22	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 18:22	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:22	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 18:22	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:22	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 18:22	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 18:22	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 18:22	75-15-0	
Carbon tetrachloride	**2.4**	ug/L	0.50	0.20	1		03/21/18 18:22	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 18:22	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/21/18 18:22	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 18:22	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 18:22	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW6D-GW-031218 **Lab ID: 10423466005** Collected: 03/12/18 11:30 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 18:22	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 18:22	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 18:22	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 18:22	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 18:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 18:22	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 18:22	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:22	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 18:22	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 18:22	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 18:22	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 18:22	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 18:22	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 18:22	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:22	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:22	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 18:22	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:22	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:22	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 18:22	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:22	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:22	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 18:22	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:22	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 18:22	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:22	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 18:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/21/18 18:22	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		03/21/18 18:22	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/21/18 18:22	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW15D-GW-031218 **Lab ID: 10423466006** Collected: 03/12/18 15:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 18:45	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:45	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 18:45	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 18:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 18:45	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:45	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:45	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 18:45	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:45	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 18:45	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 18:45	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 18:45	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 18:45	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:45	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 18:45	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 18:45	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 18:45	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:45	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 18:45	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 18:45	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 18:45	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 18:45	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 18:45	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:45	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 18:45	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 18:45	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 18:45	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 18:45	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 18:45	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:45	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 18:45	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:45	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 18:45	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 18:45	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 18:45	75-15-0	
Carbon tetrachloride	**9.5**	ug/L	0.50	0.20	1		03/21/18 18:45	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 18:45	75-00-3	
Chloroform	**0.48J**	ug/L	1.0	0.46	1		03/21/18 18:45	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 18:45	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 18:45	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Sample: MW15D-GW-031218 **Lab ID: 10423466006** Collected: 03/12/18 15:35 Received: 03/14/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 18:45	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 18:45	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 18:45	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 18:45	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 18:45	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 18:45	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 18:45	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 18:45	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 18:45	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 18:45	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 18:45	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 18:45	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 18:45	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 18:45	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 18:45	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:45	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 18:45	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 18:45	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:45	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 18:45	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:45	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 18:45	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 18:45	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 18:45	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 18:45	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 18:45	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 18:45	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 18:45	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		03/21/18 18:45	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/21/18 18:45	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

QC Batch: 528333 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10423466001, 10423466002, 10423466003, 10423466004, 10423466005, 10423466006

METHOD BLANK: 2867461 Matrix: Water
Associated Lab Samples: 10423466001, 10423466002, 10423466003, 10423466004, 10423466005, 10423466006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	03/21/18 12:03	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/21/18 12:03	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/21/18 12:03	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/21/18 12:03	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/21/18 12:03	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/21/18 12:03	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/21/18 12:03	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/21/18 12:03	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/18 12:03	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/21/18 12:03	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/21/18 12:03	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/21/18 12:03	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/21/18 12:03	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/21/18 12:03	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/21/18 12:03	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/21/18 12:03	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/21/18 12:03	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/21/18 12:03	
Acetone	ug/L	<8.8	20.0	8.8	03/21/18 12:03	
Acrolein	ug/L	<4.8	10.0	4.8	03/21/18 12:03	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/21/18 12:03	
Benzene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/21/18 12:03	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
Bromoform	ug/L	<1.0	4.0	1.0	03/21/18 12:03	
Bromomethane	ug/L	<1.5	4.0	1.5	03/21/18 12:03	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/21/18 12:03	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/21/18 12:03	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

METHOD BLANK: 2867461 Matrix: Water
Associated Lab Samples: 10423466001, 10423466002, 10423466003, 10423466004, 10423466005, 10423466006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Chloroethane	ug/L	<0.44	1.0	0.44	03/21/18 12:03	
Chloroform	ug/L	<0.46	1.0	0.46	03/21/18 12:03	
Chloromethane	ug/L	<1.1	4.0	1.1	03/21/18 12:03	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/21/18 12:03	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/21/18 12:03	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/21/18 12:03	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/21/18 12:03	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/21/18 12:03	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/21/18 12:03	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/21/18 12:03	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/21/18 12:03	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Naphthalene	ug/L	<0.42	1.0	0.42	03/21/18 12:03	
o-Xylene	ug/L	<0.11	0.50	0.11	03/21/18 12:03	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Styrene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/21/18 12:03	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/21/18 12:03	
Toluene	ug/L	<0.17	0.50	0.17	03/21/18 12:03	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/21/18 12:03	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/21/18 12:03	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/21/18 12:03	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/21/18 12:03	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/21/18 12:03	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/21/18 12:03	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		03/21/18 12:03	
4-Bromofluorobenzene (S)	%.	100	75-125		03/21/18 12:03	
Toluene-d8 (S)	%.	105	75-125		03/21/18 12:03	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

LABORATORY CONTROL SAMPLE: 2867462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	22.3	112	75-125	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.4	107	72-125	
1,1-Dichloroethane	ug/L	20	20.1	100	75-125	
1,1-Dichloroethene	ug/L	20	19.8	99	73-125	
1,1-Dichloropropene	ug/L	20	20.6	103	73-125	
1,2,3-Trichlorobenzene	ug/L	20	22.2	111	72-130	
1,2,3-Trichloropropane	ug/L	20	22.0	110	75-125	
1,2,4-Trichlorobenzene	ug/L	20	22.1	111	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.4	107	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	55.6	111	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	21.3	106	75-125	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.0	100	75-125	
1,2-Dichloropropane	ug/L	20	19.1	95	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.1	106	75-125	
1,3-Dichlorobenzene	ug/L	20	21.8	109	75-125	
1,3-Dichloropropane	ug/L	20	19.9	99	75-125	
1,4-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	417	104	75-125	
2,2,4-Trimethylpentane	ug/L	20	23.3	116	64-130	
2,2-Dichloropropane	ug/L	20	21.1	105	68-129	
2-Butanone (MEK)	ug/L	100	99.9	100	65-126	
2-Chlorotoluene	ug/L	20	20.5	103	75-125	
2-Hexanone	ug/L	100	107	107	75-134	
4-Chlorotoluene	ug/L	20	21.3	106	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	75-131	
Acetone	ug/L	100	115	115	68-150	
Acrolein	ug/L	200	176	88	63-149	
Acrylonitrile	ug/L	200	194	97	75-125	
Benzene	ug/L	20	19.6	98	75-125	
Bromobenzene	ug/L	20	21.5	108	75-125	
Bromochloromethane	ug/L	20	20.2	101	75-125	
Bromodichloromethane	ug/L	20	18.8	94	75-125	
Bromoform	ug/L	20	18.7	93	70-125	
Bromomethane	ug/L	20	3.7J	18	30-145	CL,L2
Carbon disulfide	ug/L	20	19.7	98	67-125	
Carbon tetrachloride	ug/L	20	19.5	98	75-125	
Chlorobenzene	ug/L	20	19.9	99	75-125	
Chloroethane	ug/L	20	18.9	94	73-131	
Chloroform	ug/L	20	19.0	95	75-125	
Chloromethane	ug/L	20	12.4	62	52-132	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

LABORATORY CONTROL SAMPLE: 2867462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.5	98	75-125	
Dibromomethane	ug/L	20	19.9	100	75-125	
Dichlorodifluoromethane	ug/L	20	19.2	96	64-127	
Dichlorofluoromethane	ug/L	20	18.9	94	75-125	
Diisopropyl ether	ug/L	20	19.3	97	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	23.2	116	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.8	104	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	19.6	98	75-125	
Methylene Chloride	ug/L	20	19.5	98	72-125	
n-Butylbenzene	ug/L	20	22.2	111	75-125	
n-Propylbenzene	ug/L	20	21.6	108	75-125	
Naphthalene	ug/L	20	21.7	109	61-136	
o-Xylene	ug/L	20	20.5	102	75-125	
p-Isopropyltoluene	ug/L	20	22.3	111	75-125	
sec-Butylbenzene	ug/L	20	21.4	107	75-125	
Styrene	ug/L	20	20.9	104	75-125	
tert-Amylmethyl ether	ug/L	20	19.6	98	75-125	
tert-Butyl Alcohol	ug/L	200	222	111	75-125	
tert-Butylbenzene	ug/L	20	21.7	108	75-125	
Tetrachloroethene	ug/L	20	21.0	105	75-125	
Tetrahydrofuran	ug/L	200	254	127	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.4	97	57-126	
Trichloroethene	ug/L	20	19.8	99	75-125	
Trichlorofluoromethane	ug/L	20	20.3	101	74-126	
Vinyl acetate	ug/L	20	21.6	108	72-129	
Vinyl chloride	ug/L	20	18.0	90	71-130	
Xylene (Total)	ug/L	60	62.8	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			103	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			105	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868688 2868689

Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<1.0	20	20	18.9	20.3	95	102	75-125	7	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	19.5	21.1	97	105	75-129	8	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	19.4	20.9	97	105	75-125	8	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	19.6	20.2	98	101	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2868688			2868689							
Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	20.8	22.2	104	111	75-136	7	30	
1,1-Dichloroethane	ug/L	2.0	20	20	20.6	22.2	93	101	75-125	8	30	
1,1-Dichloroethene	ug/L	<0.50	20	20	19.9	21.3	98	105	75-127	7	30	
1,1-Dichloropropene	ug/L	<0.50	20	20	19.5	21.2	97	106	75-129	9	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	19.9	21.9	100	109	72-137	9	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	18.6	20.6	93	103	75-125	10	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	20.7	22.2	103	111	69-131	7	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.1	21.4	101	107	71-125	6	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	47.6	53.2	95	106	61-127	11	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.2	20.7	96	104	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	19.2	20.5	96	103	75-125	6	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	18.1	19.0	90	94	69-125	5	30	
1,2-Dichloroethene (Total)	ug/L	3.3	40	40	41.6	44.3	96	103	75-125	6	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	18.1	19.0	91	95	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	19.8	21.3	99	106	75-125	7	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	19.9	21.4	99	107	75-125	7	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	18.4	19.6	92	98	75-125	7	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	19.6	21.0	98	105	74-125	7	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	349	360	87	90	67-128	3	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	22.8	23.3	114	116	65-150	2	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	20.3	21.8	102	109	65-136	7	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	78.6	89.0	79	89	59-125	12	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.1	20.3	96	101	73-126	6	30	
2-Hexanone	ug/L	<5.0	100	100	89.5	101	89	101	68-138	12	30	
4-Chlorotoluene	ug/L	<0.50	20	20	19.8	20.9	99	105	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	88.2	98.3	88	98	73-125	11	30	
Acetone	ug/L	<20.0	100	100	117	129	117	129	75-150	9	30	
Acrolein	ug/L	<10.0	200	200	143	171	71	86	53-150	18	30	
Acrylonitrile	ug/L	<10.0	200	200	162	178	81	89	69-127	9	30	
Benzene	ug/L	<0.50	20	20	18.6	19.9	93	99	74-125	7	30	
Bromobenzene	ug/L	<0.50	20	20	19.6	21.1	98	106	75-125	7	30	
Bromochloromethane	ug/L	<1.0	20	20	18.7	19.9	93	100	75-125	7	30	
Bromodichloromethane	ug/L	<0.50	20	20	18.0	18.9	90	94	75-125	5	30	
Bromoform	ug/L	<4.0	20	20	17.6	19.1	88	95	68-125	8	30	
Bromomethane	ug/L	<4.0	20	20	4.9	5.9	25	30	37-149	19	30	CL,M0
Carbon disulfide	ug/L	<1.0	20	20	19.5	20.7	97	103	66-139	6	30	
Carbon tetrachloride	ug/L	<0.50	20	20	19.6	21.0	98	105	75-127	7	30	
Chlorobenzene	ug/L	<0.50	20	20	19.1	20.3	95	102	75-125	6	30	
Chloroethane	ug/L	<1.0	20	20	20.8	20.0	104	100	73-134	4	30	
Chloroform	ug/L	<1.0	20	20	17.9	18.8	89	94	71-125	5	30	
Chloromethane	ug/L	<4.0	20	20	14.2	13.4	71	67	58-133	5	30	
cis-1,2-Dichloroethene	ug/L	3.1	20	20	22.1	23.4	95	101	75-125	6	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	17.1	17.9	85	90	71-125	5	30	
Dibromochloromethane	ug/L	<1.0	20	20	19.4	20.3	97	102	75-125	5	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868688 2868689

Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	18.2	19.8	91	99	75-125	8	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	21.1	20.6	106	103	70-150	3	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	19.8	19.2	99	96	75-126	3	30	
Diisopropyl ether	ug/L	<1.0	20	20	18.0	19.3	90	97	66-131	7	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	18.3	19.7	91	98	74-125	7	30	
Ethylbenzene	ug/L	<0.50	20	20	19.6	20.5	98	103	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	22.7	23.3	114	117	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	20.1	21.2	101	106	75-125	5	30	
m&p-Xylene	ug/L	<1.0	40	40	40.9	43.3	102	108	75-125	6	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	17.7	19.0	88	95	75-125	7	30	
Methylene Chloride	ug/L	<4.0	20	20	18.1	19.6	91	98	72-125	8	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.8	22.1	104	111	73-140	6	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.2	21.4	101	107	75-126	6	30	
Naphthalene	ug/L	<1.0	20	20	18.9	20.8	95	104	61-136	10	30	
o-Xylene	ug/L	<0.50	20	20	19.7	21.2	99	106	75-125	7	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	21.1	22.0	106	110	73-133	4	30	
sec-Butylbenzene	ug/L	<0.50	20	20	20.1	21.7	100	109	75-132	8	30	
Styrene	ug/L	<0.50	20	20	20.1	21.1	100	105	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	17.8	19.0	89	95	71-125	6	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	190	229	95	115	72-130	19	30	
tert-Butylbenzene	ug/L	<0.50	20	20	20.2	21.3	101	106	75-126	5	30	
Tetrachloroethene	ug/L	4.1	20	20	24.2	25.8	101	108	75-125	6	30	
Tetrahydrofuran	ug/L	<10.0	200	200	263	289	131	144	75-150	9	30	
Toluene	ug/L	<0.50	20	20	18.7	20.3	93	101	74-125	8	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	19.5	20.9	97	104	75-125	7	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	18.6	19.8	93	99	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	40.9	46.7	82	93	57-125	13	30	
Trichloroethene	ug/L	59.9	20	20	75.6	79.1	79	96	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	21.8	21.1	109	105	75-135	4	30	
Vinyl acetate	ug/L	<10.0	20	20	20.4	21.9	102	109	57-136	7	30	
Vinyl chloride	ug/L	0.34	20	20	20.1	20.0	99	98	74-141	1	30	
Xylene (Total)	ug/L	<1.5	60	60	60.6	64.5	101	108	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.						103	104	75-125			
4-Bromofluorobenzene (S)	%.						100	99	75-125			
Toluene-d8 (S)	%.						103	104	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

WORKORDER QUALIFIERS

WO: 10423466

[1] Samples in this workorder were received in the laboratory without an associated trip blank.

ANALYTE QUALIFIERS

CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

Pace Analytical Services, LLC
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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423466

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423466001	**MW16D-GW-031218**	EPA 8260B	528333		
10423466002	**MW4D-GW-031218**	EPA 8260B	528333		
10423466003	**MW6U-GW-031218**	EPA 8260B	528333		
10423466004	**MW18D-GW-031218**	EPA 8260B	528333		
10423466005	**MW6D-GW-031218**	EPA 8260B	528333		
10423466006	**MW15D-GW-031218**	EPA 8260B	528333		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO# : 10423466

10423466

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	MW16D-GW-031218	WT	G	3/12	1750	—	—	—	3				X				X												001
2	MW4D-GW-031218	↓	↓	↓	1300	—	—	—	3				X				X												002
3	MW6U-GW-031218				1035	—	—	—	3				X				X												003
4	MW18D-GW-031218				1705	—	—	—	3				X				X												004
5	MW6D-GW-031218				1130	—	—	—	3				X				X												005
6	MW15D-GW-031218				1535	—	—	—	3				X				X												006
7	Trip Blank			—	—	—	—	—	2				X				X												007
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in **bold**	[signature] / CH2M	3/13/18	1530	[signature] Pace	3/14/18	1015	
*Field filtered by client							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/12/18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2m Hill

Project #: **WO# : 10423466**

PM: JMG Due Date: 03/28/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1591

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☐ Yes ☑ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 0.9 **Cooler Temp Corrected (°C):** 0.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** MD 3/14/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)? MD 3/14/18	~~☑ Yes~~	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. No MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☐ Yes	☑ No		12. No trip blanks included
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO$_3$ ☐ H$_2$SO$_4$ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO$_3$, H$_2$SO$_4$, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. None Present
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Lindsey Date/Time: 03/13/18

Comments/Resolution: Notified client no trip blanks were received.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1030	Temp: 0.9	Corrected Temp: 0.9
Time: 1045	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/14/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s ... orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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March 26, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10423642

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423642001	**MW9D-GW-031318**	Water	03/13/18 16:35	03/15/18 10:15
10423642002	**MW19D-GW-031318**	Water	03/13/18 17:25	03/15/18 10:15
10423642003	**MW5D-GW-031318**	Water	03/13/18 11:45	03/15/18 10:15
10423642004	**MW14D-GW-031318**	Water	03/13/18 13:55	03/15/18 10:15
10423642005	**MW17D-GW-031318**	Water	03/13/18 10:25	03/15/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423642001	**MW9D-GW-031318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423642002	**MW19D-GW-031318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423642003	**MW5D-GW-031318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423642004	**MW14D-GW-031318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423642005	**MW17D-GW-031318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423642001	**MW9D-GW-031318**					
RSK 175	Methane	2.4J	ug/L	10.0	03/19/18 09:21	
EPA 6010D	Aluminum, Dissolved	10.6J	ug/L	200	03/21/18 14:21	
EPA 6010D	Barium, Dissolved	27.9	ug/L	10.0	03/21/18 14:21	
EPA 6010D	Calcium, Dissolved	54600	ug/L	500	03/21/18 14:21	
EPA 6010D	Chromium, Dissolved	5.7J	ug/L	10.0	03/21/18 14:21	
EPA 6010D	Iron, Dissolved	27.8J	ug/L	50.0	03/21/18 14:21	
EPA 6010D	Magnesium, Dissolved	15500	ug/L	500	03/21/18 14:21	
EPA 6010D	Manganese, Dissolved	4.3J	ug/L	5.0	03/21/18 14:21	
EPA 6010D	Potassium, Dissolved	2340J	ug/L	2500	03/21/18 14:21	
EPA 6010D	Sodium, Dissolved	14200	ug/L	1000	03/21/18 14:21	
EPA 6010D	Vanadium, Dissolved	7.8J	ug/L	15.0	03/21/18 14:21	
SM 2320B	Alkalinity, Total as CaCO3	162	mg/L	5.0	03/20/18 14:04	
SM 2540C	Total Dissolved Solids	299	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	10.8	mg/L	1.2	03/15/18 12:13	
EPA 300.0	Nitrate as N	4.2	mg/L	0.10	03/15/18 12:13	
EPA 300.0	Sulfate	33.1	mg/L	1.2	03/15/18 12:13	
EPA 353.2	Nitrogen, NO2 plus NO3	4.2	mg/L	0.10	03/16/18 15:24	M1
SM 5310C	Total Organic Carbon	0.77J	mg/L	1.0	03/20/18 19:16	
10423642002	**MW19D-GW-031318**					
RSK 175	Methane	4.0J	ug/L	10.0	03/19/18 09:28	
EPA 6010D	Aluminum, Dissolved	11.5J	ug/L	200	03/21/18 14:24	
EPA 6010D	Barium, Dissolved	12.4	ug/L	10.0	03/21/18 14:24	
EPA 6010D	Calcium, Dissolved	43100	ug/L	500	03/21/18 14:24	
EPA 6010D	Iron, Dissolved	25.6J	ug/L	50.0	03/21/18 14:24	
EPA 6010D	Magnesium, Dissolved	18600	ug/L	500	03/21/18 14:24	
EPA 6010D	Manganese, Dissolved	3.9J	ug/L	5.0	03/21/18 14:24	
EPA 6010D	Potassium, Dissolved	4400	ug/L	2500	03/21/18 14:24	
EPA 6010D	Sodium, Dissolved	15200	ug/L	1000	03/21/18 14:24	
EPA 6010D	Vanadium, Dissolved	6.3J	ug/L	15.0	03/21/18 14:24	
EPA 6010D	Zinc, Dissolved	2.5J	ug/L	20.0	03/21/18 14:24	
SM 2320B	Alkalinity, Total as CaCO3	179	mg/L	5.0	03/21/18 10:16	
SM 2540C	Total Dissolved Solids	281	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	7.1	mg/L	1.2	03/15/18 12:28	
EPA 300.0	Nitrate as N	4.6	mg/L	0.10	03/15/18 12:28	
EPA 300.0	Sulfate	22.9	mg/L	1.2	03/15/18 12:28	
EPA 353.2	Nitrogen, NO2 plus NO3	4.5	mg/L	0.10	03/16/18 15:28	
SM 5310C	Total Organic Carbon	0.71J	mg/L	1.0	03/20/18 19:58	
10423642003	**MW5D-GW-031318**					
RSK 175	Methane	4.0J	ug/L	10.0	03/19/18 10:18	
EPA 6010D	Barium, Dissolved	112	ug/L	10.0	03/21/18 14:27	
EPA 6010D	Calcium, Dissolved	59200	ug/L	500	03/21/18 14:27	
EPA 6010D	Copper, Dissolved	0.84J	ug/L	10.0	03/21/18 14:27	
EPA 6010D	Magnesium, Dissolved	17600	ug/L	500	03/21/18 14:27	
EPA 6010D	Manganese, Dissolved	17.9	ug/L	5.0	03/21/18 14:27	
EPA 6010D	Potassium, Dissolved	2340J	ug/L	2500	03/21/18 14:27	
EPA 6010D	Sodium, Dissolved	22400	ug/L	1000	03/21/18 14:27	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423642003	**MW5D-GW-031318**					
EPA 6010D	Vanadium, Dissolved	7.2J	ug/L	15.0	03/21/18 14:27	
SM 2320B	Alkalinity, Total as CaCO3	225	mg/L	5.0	03/21/18 10:20	
SM 2540C	Total Dissolved Solids	257	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	1.2J	mg/L	1.2	03/15/18 11:13	
EPA 300.0	Nitrate as N	0.21	mg/L	0.10	03/15/18 11:13	
EPA 300.0	Sulfate	2.8	mg/L	1.2	03/15/18 11:13	
EPA 353.2	Nitrogen, NO2 plus NO3	0.24	mg/L	0.020	03/16/18 14:46	
SM 5310C	Total Organic Carbon	0.62J	mg/L	1.0	03/20/18 20:12	
10423642004	**MW14D-GW-031318**					
RSK 175	Methane	4.7J	ug/L	10.0	03/19/18 10:33	
EPA 6010D	Barium, Dissolved	31.0	ug/L	10.0	03/21/18 14:29	
EPA 6010D	Calcium, Dissolved	30600	ug/L	500	03/21/18 14:29	
EPA 6010D	Cobalt, Dissolved	1.7J	ug/L	10.0	03/21/18 14:29	
EPA 6010D	Iron, Dissolved	331	ug/L	50.0	03/21/18 14:29	
EPA 6010D	Magnesium, Dissolved	9170	ug/L	500	03/21/18 14:29	
EPA 6010D	Manganese, Dissolved	630	ug/L	5.0	03/21/18 14:29	
EPA 6010D	Nickel, Dissolved	6.0J	ug/L	20.0	03/21/18 14:29	
EPA 6010D	Potassium, Dissolved	470J	ug/L	2500	03/21/18 14:29	
EPA 6010D	Sodium, Dissolved	29400	ug/L	1000	03/21/18 14:29	
EPA 6010D	Vanadium, Dissolved	4.0J	ug/L	15.0	03/21/18 14:29	
EPA 6010D	Zinc, Dissolved	2.3J	ug/L	20.0	03/21/18 14:29	
SM 2320B	Alkalinity, Total as CaCO3	165	mg/L	5.0	03/21/18 10:34	
SM 2540C	Total Dissolved Solids	231	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	2.0	mg/L	1.2	03/15/18 11:43	
EPA 300.0	Nitrate as N	0.050J	mg/L	0.10	03/15/18 11:43	
EPA 300.0	Sulfate	11.3	mg/L	1.2	03/15/18 11:43	
EPA 353.2	Nitrogen, NO2 plus NO3	0.029	mg/L	0.020	03/16/18 14:47	
EPA 410.4	Chemical Oxygen Demand	16.4J	mg/L	50.0	03/26/18 15:48	
SM 5310C	Total Organic Carbon	4.4	mg/L	1.0	03/20/18 20:27	
10423642005	**MW17D-GW-031318**					
RSK 175	Ethene	5.9J	ug/L	10.0	03/19/18 10:40	
RSK 175	Methane	3.7J	ug/L	10.0	03/19/18 10:40	
EPA 6010D	Aluminum, Dissolved	54.6J	ug/L	200	03/21/18 14:32	
EPA 6010D	Barium, Dissolved	102	ug/L	10.0	03/21/18 14:32	
EPA 6010D	Calcium, Dissolved	41700	ug/L	500	03/21/18 14:32	
EPA 6010D	Cobalt, Dissolved	2.8J	ug/L	10.0	03/21/18 14:32	
EPA 6010D	Iron, Dissolved	415	ug/L	50.0	03/21/18 14:32	
EPA 6010D	Magnesium, Dissolved	18500	ug/L	500	03/21/18 14:32	
EPA 6010D	Manganese, Dissolved	296	ug/L	5.0	03/21/18 14:32	
EPA 6010D	Potassium, Dissolved	11300	ug/L	2500	03/21/18 14:32	
EPA 6010D	Sodium, Dissolved	44200	ug/L	1000	03/21/18 14:32	
EPA 6010D	Vanadium, Dissolved	1.8J	ug/L	15.0	03/21/18 14:32	
SM 2320B	Alkalinity, Total as CaCO3	200	mg/L	5.0	03/21/18 10:38	
SM 2540C	Total Dissolved Solids	397	mg/L	10.0	03/19/18 15:30	
SM 4500-S-2 D	Sulfide, Total	0.013J	mg/L	0.020	03/17/18 10:42	
EPA 300.0	Chloride	28.1	mg/L	1.2	03/15/18 11:28	

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423642005	**MW17D-GW-031318**					
EPA 300.0	Nitrate as N	0.039J	mg/L	0.10	03/15/18 11:28	H1
EPA 300.0	Sulfate	69.7	mg/L	1.2	03/15/18 11:28	
EPA 353.2	Nitrogen, NO2 plus NO3	0.026	mg/L	0.020	03/16/18 14:48	
EPA 410.4	Chemical Oxygen Demand	52.2	mg/L	50.0	03/26/18 15:49	
SM 5310C	Total Organic Carbon	10.3	mg/L	1.0	03/20/18 20:41	

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman
Pace Project No.:	10423642

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: EPA 7470A
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528323

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10423327003,10423965002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2867438)
  - Alkalinity, Total as CaCO3
- MS (Lab ID: 2867440)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 2867439)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 2867441)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- MW17D-GW-031318 (Lab ID: 10423642005)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527479

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10423358001,10423358002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2861564)
  - Chloride
  - Sulfate
- MS (Lab ID: 2861566)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2861565)
  - Chloride
- MSD (Lab ID: 2861567)
  - Chloride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527480

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10423463006,10423642001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2862703)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 527480

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2861570)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2861571)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman
Pace Project No.:	10423642

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW9D-GW-031318 **Lab ID: 10423642001** Collected: 03/13/18 16:35 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 09:21	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 09:21	74-85-1	
Methane	**2.4J**	ug/L	10.0	1.1	1		03/19/18 09:21	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**10.6J**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:21	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:21	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:21	7440-38-2	
Barium, Dissolved	**27.9**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:21	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:21	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:21	7440-43-9	
Calcium, Dissolved	**54600**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:21	7440-70-2	
Chromium, Dissolved	**5.7J**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:21	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:21	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:21	7440-50-8	
Iron, Dissolved	**27.8J**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:21	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:21	7439-92-1	
Magnesium, Dissolved	**15500**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:21	7439-95-4	
Manganese, Dissolved	**4.3J**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:21	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:21	7440-02-0	
Potassium, Dissolved	**2340J**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:21	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:21	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:21	7440-22-4	
Sodium, Dissolved	**14200**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:21	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:21	7440-28-0	
Vanadium, Dissolved	**7.8J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:21	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:21	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:27	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**162**	mg/L	5.0	1.4	1		03/20/18 14:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**299**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/17/18 10:35	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**10.8**	mg/L	1.2	0.14	1		03/15/18 12:13	16887-00-6	
Nitrate as N	**4.2**	mg/L	0.10	0.0079	1		03/15/18 12:13	14797-55-8	
Sulfate	**33.1**	mg/L	1.2	0.27	1		03/15/18 12:13	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW9D-GW-031318 **Lab ID: 10423642001** Collected: 03/13/18 16:35 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.2**	mg/L	0.10	0.037	5		03/16/18 15:24		M1
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:19		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.77J**	mg/L	1.0	0.20	1		03/20/18 19:16	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW19D-GW-031318 **Lab ID: 10423642002** Collected: 03/13/18 17:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 09:28	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 09:28	74-85-1	
Methane	**4.0J**	ug/L	10.0	1.1	1		03/19/18 09:28	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**11.5J**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:24	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:24	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:24	7440-38-2	
Barium, Dissolved	**12.4**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:24	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:24	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:24	7440-43-9	
Calcium, Dissolved	**43100**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:24	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:24	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:24	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:24	7440-50-8	
Iron, Dissolved	**25.6J**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:24	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:24	7439-92-1	
Magnesium, Dissolved	**18600**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:24	7439-95-4	
Manganese, Dissolved	**3.9J**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:24	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:24	7440-02-0	
Potassium, Dissolved	**4400**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:24	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:24	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:24	7440-22-4	
Sodium, Dissolved	**15200**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:24	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:24	7440-28-0	
Vanadium, Dissolved	**6.3J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:24	7440-62-2	
Zinc, Dissolved	**2.5J**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:24	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:29	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**179**	mg/L	5.0	1.4	1		03/21/18 10:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**281**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/17/18 10:37	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.1**	mg/L	1.2	0.14	1		03/15/18 12:28	16887-00-6	
Nitrate as N	**4.6**	mg/L	0.10	0.0079	1		03/15/18 12:28	14797-55-8	
Sulfate	**22.9**	mg/L	1.2	0.27	1		03/15/18 12:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW19D-GW-031318 **Lab ID: 10423642002** Collected: 03/13/18 17:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.5**	mg/L	0.10	0.037	5		03/16/18 15:28		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:20		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.71J**	mg/L	1.0	0.20	1		03/20/18 19:58	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman

Pace Project No.: 10423642

Sample: MW5D-GW-031318 **Lab ID: 10423642003** Collected: 03/13/18 11:45 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 10:18	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 10:18	74-85-1	
Methane	**4.0J**	ug/L	10.0	1.1	1		03/19/18 10:18	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:27	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:27	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:27	7440-38-2	
Barium, Dissolved	**112**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:27	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:27	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:27	7440-43-9	
Calcium, Dissolved	**59200**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:27	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:27	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:27	7440-48-4	
Copper, Dissolved	**0.84J**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:27	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:27	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:27	7439-92-1	
Magnesium, Dissolved	**17600**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:27	7439-95-4	
Manganese, Dissolved	**17.9**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:27	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:27	7440-02-0	
Potassium, Dissolved	**2340J**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:27	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:27	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:27	7440-22-4	
Sodium, Dissolved	**22400**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:27	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:27	7440-28-0	
Vanadium, Dissolved	**7.2J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:27	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:27	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:31	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**225**	mg/L	5.0	1.4	1		03/21/18 10:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**257**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/17/18 10:38	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.14	1		03/15/18 11:13	16887-00-6	
Nitrate as N	**0.21**	mg/L	0.10	0.0079	1		03/15/18 11:13	14797-55-8	
Sulfate	**2.8**	mg/L	1.2	0.27	1		03/15/18 11:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW5D-GW-031318 **Lab ID: 10423642003** Collected: 03/13/18 11:45 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.24**	mg/L	0.020	0.0075	1		03/16/18 14:46		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/19/18 11:27	03/19/18 14:20		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.62J**	mg/L	1.0	0.20	1		03/20/18 20:12	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW14D-GW-031318 **Lab ID: 10423642004** Collected: 03/13/18 13:55 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 10:33	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 10:33	74-85-1	
Methane	**4.7J**	ug/L	10.0	1.1	1		03/19/18 10:33	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:29	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:29	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:29	7440-38-2	
Barium, Dissolved	**31.0**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:29	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:29	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:29	7440-43-9	
Calcium, Dissolved	**30600**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:29	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:29	7440-47-3	
Cobalt, Dissolved	**1.7J**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:29	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:29	7440-50-8	
Iron, Dissolved	**331**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:29	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:29	7439-92-1	
Magnesium, Dissolved	**9170**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:29	7439-95-4	
Manganese, Dissolved	**630**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:29	7439-96-5	
Nickel, Dissolved	**6.0J**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:29	7440-02-0	
Potassium, Dissolved	**470J**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:29	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:29	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:29	7440-22-4	
Sodium, Dissolved	**29400**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:29	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:29	7440-28-0	
Vanadium, Dissolved	**4.0J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:29	7440-62-2	
Zinc, Dissolved	**2.3J**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:29	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:34	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**165**	mg/L	5.0	1.4	1		03/21/18 10:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**231**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/17/18 10:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.2	0.14	1		03/15/18 11:43	16887-00-6	
Nitrate as N	**0.050J**	mg/L	0.10	0.0079	1		03/15/18 11:43	14797-55-8	
Sulfate	**11.3**	mg/L	1.2	0.27	1		03/15/18 11:43	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW14D-GW-031318 **Lab ID: 10423642004** Collected: 03/13/18 13:55 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.029**	mg/L	0.020	0.0075	1		03/16/18 14:47		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**16.4J**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**4.4**	mg/L	1.0	0.20	1		03/20/18 20:27	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW17D-GW-031318 **Lab ID: 10423642005** Collected: 03/13/18 10:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 10:40	74-84-0	
Ethene	**5.9J**	ug/L	10.0	0.68	1		03/19/18 10:40	74-85-1	
Methane	**3.7J**	ug/L	10.0	1.1	1		03/19/18 10:40	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**54.6J**	ug/L	200	8.6	1	03/16/18 14:34	03/21/18 14:32	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/16/18 14:34	03/21/18 14:32	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/16/18 14:34	03/21/18 14:32	7440-38-2	
Barium, Dissolved	**102**	ug/L	10.0	0.22	1	03/16/18 14:34	03/21/18 14:32	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/16/18 14:34	03/21/18 14:32	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/16/18 14:34	03/21/18 14:32	7440-43-9	
Calcium, Dissolved	**41700**	ug/L	500	24.7	1	03/16/18 14:34	03/21/18 14:32	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/16/18 14:34	03/21/18 14:32	7440-47-3	
Cobalt, Dissolved	**2.8J**	ug/L	10.0	1.1	1	03/16/18 14:34	03/21/18 14:32	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/16/18 14:34	03/21/18 14:32	7440-50-8	
Iron, Dissolved	**415**	ug/L	50.0	16.7	1	03/16/18 14:34	03/21/18 14:32	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/16/18 14:34	03/21/18 14:32	7439-92-1	
Magnesium, Dissolved	**18500**	ug/L	500	2.6	1	03/16/18 14:34	03/21/18 14:32	7439-95-4	
Manganese, Dissolved	**296**	ug/L	5.0	0.38	1	03/16/18 14:34	03/21/18 14:32	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/16/18 14:34	03/21/18 14:32	7440-02-0	
Potassium, Dissolved	**11300**	ug/L	2500	126	1	03/16/18 14:34	03/21/18 14:32	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/16/18 14:34	03/21/18 14:32	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/16/18 14:34	03/21/18 14:32	7440-22-4	
Sodium, Dissolved	**44200**	ug/L	1000	44.6	1	03/16/18 14:34	03/21/18 14:32	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/16/18 14:34	03/21/18 14:32	7440-28-0	
Vanadium, Dissolved	**1.8J**	ug/L	15.0	0.42	1	03/16/18 14:34	03/21/18 14:32	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/16/18 14:34	03/21/18 14:32	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/16/18 10:26	03/20/18 15:36	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**200**	mg/L	5.0	1.4	1		03/21/18 10:38		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**397**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.013J**	mg/L	0.020	0.0050	1		03/17/18 10:42	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**28.1**	mg/L	1.2	0.14	1		03/15/18 11:28	16887-00-6	
Nitrate as N	**0.039J**	mg/L	0.10	0.0079	1		03/15/18 11:28	14797-55-8	H1
Sulfate	**69.7**	mg/L	1.2	0.27	1		03/15/18 11:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Sample: MW17D-GW-031318 **Lab ID: 10423642005** Collected: 03/13/18 10:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.026**	mg/L	0.020	0.0075	1		03/16/18 14:48		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**52.2**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:49		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**10.3**	mg/L	1.0	0.20	1		03/20/18 20:41	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527919 — Analysis Method: RSK 175
QC Batch Method: RSK 175 — Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2865174 — Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/19/18 08:14	
Ethene	ug/L	<0.68	10.0	0.68	03/19/18 08:14	
Methane	ug/L	3.6J	10.0	1.1	03/19/18 08:14	

LABORATORY CONTROL SAMPLE & LCSD: 2865175 — 2865176

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	3	20	
Ethene	ug/L	106	104	101	98	95	85-115	3	20	
Methane	ug/L	60.7	60.0	57.4	99	95	85-115	4	20	

SAMPLE DUPLICATE: 2865177

Parameter	Units	10423463001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	3.0J	3.1J		20	

SAMPLE DUPLICATE: 2865178

Parameter	Units	10423642003 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	4.0J	1.4J		20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527437 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2861447 Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/20/18 14:59	

LABORATORY CONTROL SAMPLE: 2861448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861449 2861450

Parameter	Units	10423463002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.6	5.6	112	113	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527422 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2861387 Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/21/18 13:42	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/21/18 13:42	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/21/18 13:42	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/21/18 13:42	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/21/18 13:42	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/21/18 13:42	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/21/18 13:42	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/21/18 13:42	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/21/18 13:42	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/21/18 13:42	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/21/18 13:42	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/21/18 13:42	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/21/18 13:42	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/21/18 13:42	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/21/18 13:42	
Potassium, Dissolved	ug/L	<126	2500	126	03/21/18 13:42	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/21/18 13:42	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/21/18 13:42	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/21/18 13:42	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/21/18 13:42	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/21/18 13:42	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/21/18 13:42	

LABORATORY CONTROL SAMPLE: 2861388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	108	80-120	
Antimony, Dissolved	ug/L	1000	1050	105	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1020	102	80-120	
Cadmium, Dissolved	ug/L	1000	1010	101	80-120	
Calcium, Dissolved	ug/L	20000	19900	99	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	994	99	80-120	
Iron, Dissolved	ug/L	20000	20400	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Magnesium, Dissolved	ug/L	20000	20300	102	80-120	
Manganese, Dissolved	ug/L	1000	1020	102	80-120	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

LABORATORY CONTROL SAMPLE: 2861388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	20200	101	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	494	99	80-120	
Sodium, Dissolved	ug/L	20000	19800	99	80-120	
Thallium, Dissolved	ug/L	1000	990	99	80-120	
Vanadium, Dissolved	ug/L	1000	993	99	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861389 2861390

Parameter	Units	10423463001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21700	21800	108	109	75-125	0	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1050	1040	105	104	75-125	1	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1010	1010	101	101	75-125	0	20	
Barium, Dissolved	ug/L	59.5	1000	1000	1070	1080	102	102	75-125	0	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1020	1030	102	103	75-125	0	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1010	1010	101	101	75-125	0	20	
Calcium, Dissolved	ug/L	63500	20000	20000	83900	84900	102	107	75-125	1	20	
Chromium, Dissolved	ug/L	0.63J	1000	1000	1000	1000	100	100	75-125	0	20	
Cobalt, Dissolved	ug/L	1.1J	1000	1000	989	990	99	99	75-125	0	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	1000	1000	100	100	75-125	0	20	
Iron, Dissolved	ug/L	18.5J	20000	20000	20400	20400	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1010	101	101	75-125	0	20	
Magnesium, Dissolved	ug/L	18900	20000	20000	39600	39900	103	105	75-125	1	20	
Manganese, Dissolved	ug/L	0.65J	1000	1000	1010	1010	101	101	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	982	984	98	98	75-125	0	20	
Potassium, Dissolved	ug/L	1510J	20000	20000	22600	22600	105	106	75-125	0	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1050	1030	105	103	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	495	495	99	99	75-125	0	20	
Sodium, Dissolved	ug/L	18300	20000	20000	38200	38600	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	978	981	97	98	75-125	0	20	
Vanadium, Dissolved	ug/L	9.5J	1000	1000	1000	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	<1.8	1000	1000	991	993	99	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 528095 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10423642001

METHOD BLANK: 2866180 | Matrix: Water
Associated Lab Samples: 10423642001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/20/18 11:40	

LABORATORY CONTROL SAMPLE & LCSD: 2866181 | 2866182

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	42.7	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866183 | 2866184

Parameter	Units	10423642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	162	40	40	207	208	112	115	80-120	0	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866185 | 2866186

Parameter	Units	10423769005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	28.4	40	40	66.0	73.6	94	113	80-120	11	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 528323 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2867435 | Matrix: Water
Associated Lab Samples: 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/21/18 09:31	

LABORATORY CONTROL SAMPLE & LCSD: 2867436 2867437

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.8	42.8	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2867438 2867439

Parameter	Units	10423327003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	1040	40	40	1100	1090	150	127	80-120	1	30	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2867440 2867441

Parameter	Units	10423965002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	952	40	40	1000	1010	121	136	80-120	1	30	M1

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527922 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2865184 | Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/19/18 15:30	

LABORATORY CONTROL SAMPLE: 2865185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	978	98	80-120	

SAMPLE DUPLICATE: 2865186

Parameter	Units	10423371001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2140	2140	0	10	

SAMPLE DUPLICATE: 2865187

Parameter	Units	10423477001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1660	1700	2	10	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 104429 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 450022 Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/17/18 10:31	

LABORATORY CONTROL SAMPLE: 450023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.21	107	90-110	

MATRIX SPIKE SAMPLE: 450025

Parameter	Units	10423642001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.20	100	75-125	

SAMPLE DUPLICATE: 450024

Parameter	Units	10423642001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527479 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2861562 | Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.14	1.2	0.14	03/15/18 09:55	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/15/18 09:55	
Sulfate	mg/L	<0.27	1.2	0.27	03/15/18 09:55	

LABORATORY CONTROL SAMPLE: 2861563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	12.3	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861564 2861565

Parameter	Units	10423358001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	13.3	12.5	12.5	23.3	24.2	80	87	90-110	4	20	M1
Nitrate as N	mg/L	0.039J	1	1	0.95	0.95	91	91	90-110	0	20	
Sulfate	mg/L	9.4	12.5	12.5	20.3	21.0	87	92	90-110	3	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861566 2861567

Parameter	Units	10423358002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	17.2	12.5	12.5	27.5	27.2	82	79	90-110	1	20	M1
Nitrate as N	mg/L	0.31	1	1	1.2	1.2	94	91	90-110	2	20	
Sulfate	mg/L	28.9	12.5	12.5	38.3	37.9	75	72	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527480 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 2861568 Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/16/18 14:57	

LABORATORY CONTROL SAMPLE: 2861569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861570 2861571

Parameter	Units	10423463006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.8	95	92	90-110	1	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2862702 2862703

Parameter	Units	10423642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	8.9	8.3	94	82	90-110	7	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 527947 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10423642001, 10423642002, 10423642003

METHOD BLANK: 2865260 | Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/19/18 14:05	

LABORATORY CONTROL SAMPLE: 2865261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865262 2865263

Parameter	Units	10423608001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<50000 ug/L	250	250	302	275	107	96	90-110	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865264 2865265

Parameter	Units	10423789001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	61.9	250	250	320	313	103	101	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 529034 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10423642004, 10423642005

METHOD BLANK: 2871214 | Matrix: Water
Associated Lab Samples: 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/26/18 15:47	

LABORATORY CONTROL SAMPLE: 2871215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	301	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871216 2871217

Parameter	Units	10423642004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	16.4J	250	250	283	270	107	102	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871218 2871219

Parameter	Units	10423642005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	52.2	250	250	308	308	102	103	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

QC Batch: 138929 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

METHOD BLANK: 550472 Matrix: Water
Associated Lab Samples: 10423642001, 10423642002, 10423642003, 10423642004, 10423642005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/20/18 18:47	

LABORATORY CONTROL SAMPLE: 550473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550474 550475

Parameter	Units	10423642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.77J	25	25	27.7	27.7	108	108	80-120	0	20	

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QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423642001	**MW9D-GW-031318**	RSK 175	527919		
10423642002	**MW19D-GW-031318**	RSK 175	527919		
10423642003	**MW5D-GW-031318**	RSK 175	527919		
10423642004	**MW14D-GW-031318**	RSK 175	527919		
10423642005	**MW17D-GW-031318**	RSK 175	527919		
10423642001	**MW9D-GW-031318**	EPA 3010	527422	EPA 6010D	527913
10423642002	**MW19D-GW-031318**	EPA 3010	527422	EPA 6010D	527913
10423642003	**MW5D-GW-031318**	EPA 3010	527422	EPA 6010D	527913
10423642004	**MW14D-GW-031318**	EPA 3010	527422	EPA 6010D	527913
10423642005	**MW17D-GW-031318**	EPA 3010	527422	EPA 6010D	527913
10423642001	**MW9D-GW-031318**	EPA 7470A	527437	EPA 7470A	527865
10423642002	**MW19D-GW-031318**	EPA 7470A	527437	EPA 7470A	527865
10423642003	**MW5D-GW-031318**	EPA 7470A	527437	EPA 7470A	527865
10423642004	**MW14D-GW-031318**	EPA 7470A	527437	EPA 7470A	527865
10423642005	**MW17D-GW-031318**	EPA 7470A	527437	EPA 7470A	527865
10423642001	**MW9D-GW-031318**	SM 2320B	528095		
10423642002	**MW19D-GW-031318**	SM 2320B	528323		
10423642003	**MW5D-GW-031318**	SM 2320B	528323		
10423642004	**MW14D-GW-031318**	SM 2320B	528323		
10423642005	**MW17D-GW-031318**	SM 2320B	528323		
10423642001	**MW9D-GW-031318**	SM 2540C	527922		
10423642002	**MW19D-GW-031318**	SM 2540C	527922		
10423642003	**MW5D-GW-031318**	SM 2540C	527922		
10423642004	**MW14D-GW-031318**	SM 2540C	527922		
10423642005	**MW17D-GW-031318**	SM 2540C	527922		
10423642001	**MW9D-GW-031318**	SM 4500-S-2 D	104429		
10423642002	**MW19D-GW-031318**	SM 4500-S-2 D	104429		
10423642003	**MW5D-GW-031318**	SM 4500-S-2 D	104429		
10423642004	**MW14D-GW-031318**	SM 4500-S-2 D	104429		
10423642005	**MW17D-GW-031318**	SM 4500-S-2 D	104429		
10423642001	**MW9D-GW-031318**	EPA 300.0	527479		
10423642002	**MW19D-GW-031318**	EPA 300.0	527479		
10423642003	**MW5D-GW-031318**	EPA 300.0	527479		
10423642004	**MW14D-GW-031318**	EPA 300.0	527479		
10423642005	**MW17D-GW-031318**	EPA 300.0	527479		
10423642001	**MW9D-GW-031318**	EPA 353.2	527480		
10423642002	**MW19D-GW-031318**	EPA 353.2	527480		
10423642003	**MW5D-GW-031318**	EPA 353.2	527480		
10423642004	**MW14D-GW-031318**	EPA 353.2	527480		
10423642005	**MW17D-GW-031318**	EPA 353.2	527480		
10423642001	**MW9D-GW-031318**	EPA 410.4	527947	EPA 410.4	528031
10423642002	**MW19D-GW-031318**	EPA 410.4	527947	EPA 410.4	528031
10423642003	**MW5D-GW-031318**	EPA 410.4	527947	EPA 410.4	528031
10423642004	**MW14D-GW-031318**	EPA 410.4	529034	EPA 410.4	529119

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423642

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423642005	**MW17D-GW-031318**	EPA 410.4	529034	EPA 410.4	529119
10423642001	**MW9D-GW-031318**	SM 5310C	138929		
10423642002	**MW19D-GW-031318**	SM 5310C	138929		
10423642003	**MW5D-GW-031318**	SM 5310C	138929		
10423642004	**MW14D-GW-031318**	SM 5310C	138929		
10423642005	**MW17D-GW-031318**	SM 5310C	138929		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be

WO# : 10423642

10423642

Section A — Required Client Information:	Section B — Required Project Information:	Section C — Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: UPRR_Freeman	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Collected Start DATE (2018)	Collected Start TIME	Collected End DATE	Collected End TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	~~Low Level VOCs 8260~~	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	MW9D-GW-031318	WT	G	3/13	1635	–	–	–	9	X	X	X		X		JE	X	X	X	X	X	X	X	X	X		001			48 hr hold time
2	MW19D-GW-031318	WT	G	3/13	1725	–	–	–	9	X	X	X		X			X	X	X	X	X	X	X	X	X		002			48 hr hold time
3	MW5D-GW-031318	WT	G	3/13	1145	–	–	–	9	X	X	X		X			X	X	X	X	X	X	X	X	X		003			48 hr hold time
4	MW14D-GW-031318	WT	G	3/13	1355	–	–	–	9	X	X	X		X			X	X	X	X	X	X	X	X	X		004			48 hr hold time
5	MW17D-GW-031318	WT	G	3/13	1025	–	–	–	9	X	X	X		X			X	X	X	X	X	X	X	X	X		005			48 hr hold time
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jnth G / CH2M	3/14/18	1430	Mark — Pace	3/15/18	1015	4.2	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: Jnth G — DATE Signed: 3/13/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO# : 10423642

PM: JMG Due Date: 03/29/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1606

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.2 **Cooler Temp Corrected (°C):** 4.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** ME 3/15/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-5 ✓ ✓ ✓
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Lindsey Date/Time: 03/15/18

Comments/Resolution: 353.2 N+N is required per Lindsey.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1048	Temp: 4.2	Corrected Temp: 4.2
Time: 1055	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/15/18

Note: Whenever there is a discrepancy affecting North Carolina compliance ... orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 2072678

2072678

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin:

Workorder: 10423642 **Workorder Name:** 1497 UPRR_Freeman **Owner Received Date:** 3/15/2018 **Results Requested By:** 3/29/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis: 5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	MW9D-GW-031318	PS	3/13/2018 16:35	10423642001	Water	1	X	
2	MW19D-GW-031318	PS	3/13/2018 17:25	10423642002	Water	1	X	
3	MW5D-GW-031318	PS	3/13/2018 11:45	10423642003	Water	1	X	
4	MW14D-GW-031318	PS	3/13/2018 13:55	10423642004	Water	1	X	
5	MW17D-GW-031318	PS	3/13/2018 10:25	10423642005	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	3/15/18 1650	FedEx	
2	FedEx	3/16/18 1145	C Mitchell Pace	3/16/18 1145
3				

Comments:

Cooler Temperature on Receipt 4.7 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#:2072678

PM: CMM Due Date: 03/29/18

CLIENT: PASI-MINN

Pace Analytical

Sample Condition Upon Re

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje...

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3-16-18

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☐Yes ☑No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ____________________ Date/Time: __________

Comments/ Resolution: ____________________

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10423642 **Workorder Name:** 1497 UPRR_Freeman **Owner Received Date:** 3/15/2018 **Results Requested By:** 3/29/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	MW9D-GW-031318	PS	3/13/2018 16:35	10423642001	Water	2	X	
2	MW19D-GW-031318	PS	3/13/2018 17:25	10423642002	Water	2	X	
3	MW5D-GW-031318	PS	3/13/2018 11:45	10423642003	Water	2	X	
4	MW14D-GW-031318	PS	3/13/2018 13:55	10423642004	Water	2	X	
5	MW17D-GW-031318	PS	3/13/2018 10:25	10423642005	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] PACE	3/15/18 1745	D/ Clapp	3-15-18 1900
2	D Clapp	3-15-18 2330	B Mathews	3/16/18 0715
3				

Comments:

Cooler Temperature on Receipt 4.6 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO#: 12105949
PM: HRZ Due Date: 03/29/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: Temp Blank? ☐ Yes ☑ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 4.3 Cooler Temp Corrected °C: 4.6 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3-15-18 DC

Comments: BM 3/16/18

Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Angela Loisel **Date:** 3/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 26, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10423643

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 UPRR_Freeman

Pace Project No.: 10423643

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423643001	**MW9D-GW-031318**	Water	03/13/18 16:35	03/15/18 10:15
10423643002	**MW19D-GW-031318**	Water	03/13/18 17:25	03/15/18 10:15
10423643003	**MW5D-GW-031318**	Water	03/13/18 11:45	03/15/18 10:15
10423643004	**MW14D-GW-031318**	Water	03/13/18 13:55	03/15/18 10:15
10423643005	**MW17D-GW-031318**	Water	03/13/18 10:25	03/15/18 10:15
10423643006	**Trip Blank**	Water	03/13/18 00:00	03/15/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423643001	**MW9D-GW-031318**	EPA 8260B	AEZ	83	PASI-M
10423643002	**MW19D-GW-031318**	EPA 8260B	AEZ, DS2	83	PASI-M
10423643003	**MW5D-GW-031318**	EPA 8260B	AEZ	83	PASI-M
10423643004	**MW14D-GW-031318**	EPA 8260B	AEZ	83	PASI-M
10423643005	**MW17D-GW-031318**	EPA 8260B	AEZ	83	PASI-M
10423643006	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423643001	**MW9D-GW-031318**					
EPA 8260B	Carbon tetrachloride	101	ug/L	0.50	03/21/18 16:00	
EPA 8260B	Chloroform	3.8	ug/L	1.0	03/21/18 16:00	
10423643002	**MW19D-GW-031318**					
EPA 8260B	Carbon disulfide	0.42J	ug/L	1.0	03/21/18 19:09	
EPA 8260B	Carbon tetrachloride	423	ug/L	1.0	03/22/18 16:03	
EPA 8260B	Chloroform	18.9	ug/L	1.0	03/21/18 19:09	
10423643005	**MW17D-GW-031318**					
EPA 8260B	Carbon disulfide	1.3	ug/L	1.0	03/22/18 03:48	
10423643006	**Trip Blank**					
EPA 8260B	Chloroform	0.59J	ug/L	1.0	03/22/18 00:15	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
6 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- MW14D-GW-031318 (Lab ID: 10423643004)
- MW19D-GW-031318 (Lab ID: 10423643002)
- MW5D-GW-031318 (Lab ID: 10423643003)
- MW9D-GW-031318 (Lab ID: 10423643001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 528333

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 2867461)
  - Bromomethane
- LCS (Lab ID: 2867462)
  - Bromomethane
- MS (Lab ID: 2868688)
  - Bromomethane
- MSD (Lab ID: 2868689)
  - Bromomethane
- MW14D-GW-031318 (Lab ID: 10423643004)
  - Bromomethane
- MW19D-GW-031318 (Lab ID: 10423643002)
  - Bromomethane
- MW5D-GW-031318 (Lab ID: 10423643003)
  - Bromomethane
- MW9D-GW-031318 (Lab ID: 10423643001)
  - Bromomethane

QC Batch: 528473

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 2868172)
  - Bromomethane
- DUP (Lab ID: 2868193)
  - Bromomethane
- LCS (Lab ID: 2868173)

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

QC Batch: 528473

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- Bromomethane
- LCSD (Lab ID: 2868192)
  - Bromomethane
- MS (Lab ID: 2868194)
  - Bromomethane
- MW17D-GW-031318 (Lab ID: 10423643005)
  - Bromomethane
- Trip Blank (Lab ID: 10423643006)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528333

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424459001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2868688)
  - Bromomethane
- MSD (Lab ID: 2868689)
  - Bromomethane

QC Batch: 528473

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW9D-GW-031318 **Lab ID: 10423643001** Collected: 03/13/18 16:35 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 16:00	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:00	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 16:00	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 16:00	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 16:00	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:00	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:00	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 16:00	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:00	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 16:00	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 16:00	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 16:00	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 16:00	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:00	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 16:00	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 16:00	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 16:00	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:00	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 16:00	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 16:00	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 16:00	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 16:00	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 16:00	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:00	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 16:00	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 16:00	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 16:00	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 16:00	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 16:00	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:00	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 16:00	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:00	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 16:00	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 16:00	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 16:00	75-15-0	
Carbon tetrachloride	**101**	ug/L	0.50	0.20	1		03/21/18 16:00	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 16:00	75-00-3	
Chloroform	**3.8**	ug/L	1.0	0.46	1		03/21/18 16:00	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 16:00	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 16:00	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW9D-GW-031318 **Lab ID: 10423643001** Collected: 03/13/18 16:35 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 16:00	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 16:00	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 16:00	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 16:00	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 16:00	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 16:00	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 16:00	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 16:00	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 16:00	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 16:00	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 16:00	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 16:00	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 16:00	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 16:00	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 16:00	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:00	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 16:00	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 16:00	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:00	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 16:00	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:00	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 16:00	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 16:00	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 16:00	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 16:00	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 16:00	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 16:00	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 16:00	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		03/21/18 16:00	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/21/18 16:00	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW19D-GW-031318 **Lab ID: 10423643002** Collected: 03/13/18 17:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 19:09	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 19:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 19:09	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 19:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 19:09	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 19:09	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 19:09	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 19:09	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 19:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 19:09	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 19:09	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 19:09	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 19:09	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 19:09	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 19:09	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 19:09	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 19:09	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 19:09	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 19:09	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 19:09	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 19:09	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 19:09	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 19:09	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 19:09	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 19:09	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 19:09	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 19:09	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 19:09	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 19:09	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 19:09	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 19:09	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 19:09	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 19:09	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 19:09	74-83-9	CL,L2
Carbon disulfide	**0.42J**	ug/L	1.0	0.37	1		03/21/18 19:09	75-15-0	
Carbon tetrachloride	**423**	ug/L	1.0	0.40	2		03/22/18 16:03	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 19:09	75-00-3	
Chloroform	**18.9**	ug/L	1.0	0.46	1		03/21/18 19:09	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 19:09	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 19:09	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW19D-GW-031318 **Lab ID: 10423643002** Collected: 03/13/18 17:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 19:09	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 19:09	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 19:09	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 19:09	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 19:09	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 19:09	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 19:09	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 19:09	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 19:09	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 19:09	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 19:09	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 19:09	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 19:09	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 19:09	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 19:09	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 19:09	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 19:09	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 19:09	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 19:09	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 19:09	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 19:09	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 19:09	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 19:09	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 19:09	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 19:09	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 19:09	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 19:09	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 19:09	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		03/21/18 19:09	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/21/18 19:09	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW5D-GW-031318 **Lab ID: 10423643003** Collected: 03/13/18 11:45 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 15:12	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 15:12	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 15:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 15:12	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:12	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 15:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 15:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 15:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 15:12	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 15:12	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 15:12	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 15:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:12	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 15:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 15:12	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 15:12	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 15:12	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 15:12	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:12	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 15:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 15:12	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 15:12	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 15:12	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 15:12	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:12	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 15:12	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:12	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 15:12	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 15:12	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 15:12	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:12	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 15:12	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/21/18 15:12	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 15:12	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 15:12	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW5D-GW-031318 **Lab ID: 10423643003** Collected: 03/13/18 11:45 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 15:12	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 15:12	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 15:12	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 15:12	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 15:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 15:12	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 15:12	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:12	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 15:12	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 15:12	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 15:12	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 15:12	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 15:12	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 15:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:12	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:12	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 15:12	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:12	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:12	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 15:12	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:12	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:12	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 15:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:12	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 15:12	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 15:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 15:12	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		03/21/18 15:12	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/21/18 15:12	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW14D-GW-031318 **Lab ID: 10423643004** Collected: 03/13/18 13:55 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 15:36	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:36	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 15:36	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 15:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 15:36	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:36	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:36	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 15:36	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:36	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 15:36	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 15:36	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 15:36	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 15:36	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:36	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 15:36	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 15:36	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 15:36	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:36	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 15:36	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 15:36	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 15:36	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 15:36	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 15:36	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:36	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 15:36	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 15:36	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 15:36	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 15:36	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 15:36	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:36	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 15:36	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:36	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 15:36	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 15:36	74-83-9	CL,L2
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 15:36	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:36	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 15:36	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/21/18 15:36	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 15:36	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 15:36	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW14D-GW-031318 **Lab ID: 10423643004** Collected: 03/13/18 13:55 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 15:36	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 15:36	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 15:36	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 15:36	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 15:36	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 15:36	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 15:36	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 15:36	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 15:36	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 15:36	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 15:36	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 15:36	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 15:36	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 15:36	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 15:36	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:36	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 15:36	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 15:36	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:36	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 15:36	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:36	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 15:36	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 15:36	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 15:36	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 15:36	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 15:36	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 15:36	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1		03/21/18 15:36	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		03/21/18 15:36	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/21/18 15:36	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW17D-GW-031318 **Lab ID: 10423643005** Collected: 03/13/18 10:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 03:48	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 03:48	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 03:48	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 03:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 03:48	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 03:48	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 03:48	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 03:48	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 03:48	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 03:48	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 03:48	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 03:48	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 03:48	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 03:48	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 03:48	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 03:48	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 03:48	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 03:48	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 03:48	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 03:48	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 03:48	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 03:48	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 03:48	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 03:48	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 03:48	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 03:48	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 03:48	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 03:48	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 03:48	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 03:48	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 03:48	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 03:48	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 03:48	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 03:48	74-83-9	CL
Carbon disulfide	**1.3**	ug/L	1.0	0.37	1		03/22/18 03:48	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 03:48	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 03:48	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 03:48	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 03:48	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 03:48	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: MW17D-GW-031318 **Lab ID: 10423643005** Collected: 03/13/18 10:25 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 03:48	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 03:48	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 03:48	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 03:48	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 03:48	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 03:48	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 03:48	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 03:48	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 03:48	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 03:48	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 03:48	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 03:48	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 03:48	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 03:48	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 03:48	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 03:48	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 03:48	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 03:48	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 03:48	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 03:48	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 03:48	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 03:48	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 03:48	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 03:48	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 03:48	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 03:48	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 03:48	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/22/18 03:48	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		03/22/18 03:48	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/22/18 03:48	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Sample: Trip Blank **Lab ID: 10423643006** Collected: 03/13/18 00:00 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 00:15	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 00:15	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 00:15	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 00:15	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 00:15	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 00:15	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 00:15	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 00:15	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 00:15	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 00:15	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 00:15	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 00:15	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 00:15	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 00:15	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 00:15	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 00:15	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 00:15	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 00:15	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 00:15	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 00:15	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 00:15	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 00:15	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 00:15	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 00:15	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 00:15	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 00:15	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 00:15	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 00:15	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 00:15	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 00:15	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 00:15	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 00:15	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 00:15	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 00:15	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 00:15	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 00:15	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 00:15	75-00-3	
Chloroform	**0.59J**	ug/L	1.0	0.46	1		03/22/18 00:15	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 00:15	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 00:15	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman

Pace Project No.: 10423643

Sample: Trip Blank **Lab ID: 10423643006** Collected: 03/13/18 00:00 Received: 03/15/18 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 00:15	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 00:15	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 00:15	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 00:15	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 00:15	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 00:15	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 00:15	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 00:15	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 00:15	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 00:15	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 00:15	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 00:15	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 00:15	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 00:15	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 00:15	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 00:15	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 00:15	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 00:15	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 00:15	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 00:15	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 00:15	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 00:15	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 00:15	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 00:15	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 00:15	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 00:15	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 00:15	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/22/18 00:15	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		03/22/18 00:15	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/22/18 00:15	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

QC Batch: 528333 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10423643001, 10423643002, 10423643003, 10423643004

METHOD BLANK: 2867461 | Matrix: Water
Associated Lab Samples: 10423643001, 10423643002, 10423643003, 10423643004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	03/21/18 12:03	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/21/18 12:03	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/21/18 12:03	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/21/18 12:03	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/21/18 12:03	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/21/18 12:03	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/21/18 12:03	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/21/18 12:03	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/18 12:03	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/21/18 12:03	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/21/18 12:03	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/21/18 12:03	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/21/18 12:03	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/21/18 12:03	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/21/18 12:03	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/21/18 12:03	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/21/18 12:03	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/21/18 12:03	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/21/18 12:03	
Acetone	ug/L	<8.8	20.0	8.8	03/21/18 12:03	
Acrolein	ug/L	<4.8	10.0	4.8	03/21/18 12:03	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/21/18 12:03	
Benzene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/21/18 12:03	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
Bromoform	ug/L	<1.0	4.0	1.0	03/21/18 12:03	
Bromomethane	ug/L	<1.5	4.0	1.5	03/21/18 12:03	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/21/18 12:03	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/21/18 12:03	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

METHOD BLANK: 2867461 Matrix: Water
Associated Lab Samples: 10423643001, 10423643002, 10423643003, 10423643004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Chloroethane	ug/L	<0.44	1.0	0.44	03/21/18 12:03	
Chloroform	ug/L	<0.46	1.0	0.46	03/21/18 12:03	
Chloromethane	ug/L	<1.1	4.0	1.1	03/21/18 12:03	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/21/18 12:03	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/21/18 12:03	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/21/18 12:03	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/21/18 12:03	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/21/18 12:03	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/21/18 12:03	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/21/18 12:03	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/21/18 12:03	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/21/18 12:03	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Naphthalene	ug/L	<0.42	1.0	0.42	03/21/18 12:03	
o-Xylene	ug/L	<0.11	0.50	0.11	03/21/18 12:03	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
Styrene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/21/18 12:03	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/21/18 12:03	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/18 12:03	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/21/18 12:03	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/21/18 12:03	
Toluene	ug/L	<0.17	0.50	0.17	03/21/18 12:03	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/21/18 12:03	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/21/18 12:03	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/21/18 12:03	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/21/18 12:03	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/21/18 12:03	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/21/18 12:03	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/21/18 12:03	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/21/18 12:03	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		03/21/18 12:03	
4-Bromofluorobenzene (S)	%.	100	75-125		03/21/18 12:03	
Toluene-d8 (S)	%.	105	75-125		03/21/18 12:03	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

LABORATORY CONTROL SAMPLE: 2867462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	22.3	112	75-125	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.4	107	72-125	
1,1-Dichloroethane	ug/L	20	20.1	100	75-125	
1,1-Dichloroethene	ug/L	20	19.8	99	73-125	
1,1-Dichloropropene	ug/L	20	20.6	103	73-125	
1,2,3-Trichlorobenzene	ug/L	20	22.2	111	72-130	
1,2,3-Trichloropropane	ug/L	20	22.0	110	75-125	
1,2,4-Trichlorobenzene	ug/L	20	22.1	111	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.4	107	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	55.6	111	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	21.3	106	75-125	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.0	100	75-125	
1,2-Dichloropropane	ug/L	20	19.1	95	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.1	106	75-125	
1,3-Dichlorobenzene	ug/L	20	21.8	109	75-125	
1,3-Dichloropropane	ug/L	20	19.9	99	75-125	
1,4-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	417	104	75-125	
2,2,4-Trimethylpentane	ug/L	20	23.3	116	64-130	
2,2-Dichloropropane	ug/L	20	21.1	105	68-129	
2-Butanone (MEK)	ug/L	100	99.9	100	65-126	
2-Chlorotoluene	ug/L	20	20.5	103	75-125	
2-Hexanone	ug/L	100	107	107	75-134	
4-Chlorotoluene	ug/L	20	21.3	106	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	75-131	
Acetone	ug/L	100	115	115	68-150	
Acrolein	ug/L	200	176	88	63-149	
Acrylonitrile	ug/L	200	194	97	75-125	
Benzene	ug/L	20	19.6	98	75-125	
Bromobenzene	ug/L	20	21.5	108	75-125	
Bromochloromethane	ug/L	20	20.2	101	75-125	
Bromodichloromethane	ug/L	20	18.8	94	75-125	
Bromoform	ug/L	20	18.7	93	70-125	
Bromomethane	ug/L	20	3.7J	18	30-145	CL,L2
Carbon disulfide	ug/L	20	19.7	98	67-125	
Carbon tetrachloride	ug/L	20	19.5	98	75-125	
Chlorobenzene	ug/L	20	19.9	99	75-125	
Chloroethane	ug/L	20	18.9	94	73-131	
Chloroform	ug/L	20	19.0	95	75-125	
Chloromethane	ug/L	20	12.4	62	52-132	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	75-125	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

LABORATORY CONTROL SAMPLE: 2867462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.5	98	75-125	
Dibromomethane	ug/L	20	19.9	100	75-125	
Dichlorodifluoromethane	ug/L	20	19.2	96	64-127	
Dichlorofluoromethane	ug/L	20	18.9	94	75-125	
Diisopropyl ether	ug/L	20	19.3	97	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	23.2	116	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.8	104	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	19.6	98	75-125	
Methylene Chloride	ug/L	20	19.5	98	72-125	
n-Butylbenzene	ug/L	20	22.2	111	75-125	
n-Propylbenzene	ug/L	20	21.6	108	75-125	
Naphthalene	ug/L	20	21.7	109	61-136	
o-Xylene	ug/L	20	20.5	102	75-125	
p-Isopropyltoluene	ug/L	20	22.3	111	75-125	
sec-Butylbenzene	ug/L	20	21.4	107	75-125	
Styrene	ug/L	20	20.9	104	75-125	
tert-Amylmethyl ether	ug/L	20	19.6	98	75-125	
tert-Butyl Alcohol	ug/L	200	222	111	75-125	
tert-Butylbenzene	ug/L	20	21.7	108	75-125	
Tetrachloroethene	ug/L	20	21.0	105	75-125	
Tetrahydrofuran	ug/L	200	254	127	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.4	97	57-126	
Trichloroethene	ug/L	20	19.8	99	75-125	
Trichlorofluoromethane	ug/L	20	20.3	101	74-126	
Vinyl acetate	ug/L	20	21.6	108	72-129	
Vinyl chloride	ug/L	20	18.0	90	71-130	
Xylene (Total)	ug/L	60	62.8	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			103	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			105	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868688 2868689

Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<1.0	20	20	18.9	20.3	95	102	75-125	7	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	19.5	21.1	97	105	75-129	8	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	19.4	20.9	97	105	75-125	8	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	19.6	20.2	98	101	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868688 2868689

Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	20.8	22.2	104	111	75-136	7	30	
1,1-Dichloroethane	ug/L	2.0	20	20	20.6	22.2	93	101	75-125	8	30	
1,1-Dichloroethene	ug/L	<0.50	20	20	19.9	21.3	98	105	75-127	7	30	
1,1-Dichloropropene	ug/L	<0.50	20	20	19.5	21.2	97	106	75-129	9	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	19.9	21.9	100	109	72-137	9	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	18.6	20.6	93	103	75-125	10	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	20.7	22.2	103	111	69-131	7	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.1	21.4	101	107	71-125	6	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	47.6	53.2	95	106	61-127	11	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.2	20.7	96	104	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	19.2	20.5	96	103	75-125	6	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	18.1	19.0	90	94	69-125	5	30	
1,2-Dichloroethene (Total)	ug/L	3.3	40	40	41.6	44.3	96	103	75-125	6	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	18.1	19.0	91	95	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	19.8	21.3	99	106	75-125	7	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	19.9	21.4	99	107	75-125	7	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	18.4	19.6	92	98	75-125	7	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	19.6	21.0	98	105	74-125	7	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	349	360	87	90	67-128	3	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	22.8	23.3	114	116	65-150	2	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	20.3	21.8	102	109	65-136	7	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	78.6	89.0	79	89	59-125	12	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.1	20.3	96	101	73-126	6	30	
2-Hexanone	ug/L	<5.0	100	100	89.5	101	89	101	68-138	12	30	
4-Chlorotoluene	ug/L	<0.50	20	20	19.8	20.9	99	105	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	88.2	98.3	88	98	73-125	11	30	
Acetone	ug/L	<20.0	100	100	117	129	117	129	75-150	9	30	
Acrolein	ug/L	<10.0	200	200	143	171	71	86	53-150	18	30	
Acrylonitrile	ug/L	<10.0	200	200	162	178	81	89	69-127	9	30	
Benzene	ug/L	<0.50	20	20	18.6	19.9	93	99	74-125	7	30	
Bromobenzene	ug/L	<0.50	20	20	19.6	21.1	98	106	75-125	7	30	
Bromochloromethane	ug/L	<1.0	20	20	18.7	19.9	93	100	75-125	7	30	
Bromodichloromethane	ug/L	<0.50	20	20	18.0	18.9	90	94	75-125	5	30	
Bromoform	ug/L	<4.0	20	20	17.6	19.1	88	95	68-125	8	30	
Bromomethane	ug/L	<4.0	20	20	4.9	5.9	25	30	37-149	19	30	CL,M0
Carbon disulfide	ug/L	<1.0	20	20	19.5	20.7	97	103	66-139	6	30	
Carbon tetrachloride	ug/L	<0.50	20	20	19.6	21.0	98	105	75-127	7	30	
Chlorobenzene	ug/L	<0.50	20	20	19.1	20.3	95	102	75-125	6	30	
Chloroethane	ug/L	<1.0	20	20	20.8	20.0	104	100	73-134	4	30	
Chloroform	ug/L	<1.0	20	20	17.9	18.8	89	94	71-125	5	30	
Chloromethane	ug/L	<4.0	20	20	14.2	13.4	71	67	58-133	5	30	
cis-1,2-Dichloroethene	ug/L	3.1	20	20	22.1	23.4	95	101	75-125	6	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	17.1	17.9	85	90	71-125	5	30	
Dibromochloromethane	ug/L	<1.0	20	20	19.4	20.3	97	102	75-125	5	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868688 2868689

Parameter	Units	10424459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	18.2	19.8	91	99	75-125	8	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	21.1	20.6	106	103	70-150	3	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	19.8	19.2	99	96	75-126	3	30	
Diisopropyl ether	ug/L	<1.0	20	20	18.0	19.3	90	97	66-131	7	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	18.3	19.7	91	98	74-125	7	30	
Ethylbenzene	ug/L	<0.50	20	20	19.6	20.5	98	103	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	22.7	23.3	114	117	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	20.1	21.2	101	106	75-125	5	30	
m&p-Xylene	ug/L	<1.0	40	40	40.9	43.3	102	108	75-125	6	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	17.7	19.0	88	95	75-125	7	30	
Methylene Chloride	ug/L	<4.0	20	20	18.1	19.6	91	98	72-125	8	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.8	22.1	104	111	73-140	6	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.2	21.4	101	107	75-126	6	30	
Naphthalene	ug/L	<1.0	20	20	18.9	20.8	95	104	61-136	10	30	
o-Xylene	ug/L	<0.50	20	20	19.7	21.2	99	106	75-125	7	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	21.1	22.0	106	110	73-133	4	30	
sec-Butylbenzene	ug/L	<0.50	20	20	20.1	21.7	100	109	75-132	8	30	
Styrene	ug/L	<0.50	20	20	20.1	21.1	100	105	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	17.8	19.0	89	95	71-125	6	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	190	229	95	115	72-130	19	30	
tert-Butylbenzene	ug/L	<0.50	20	20	20.2	21.3	101	106	75-126	5	30	
Tetrachloroethene	ug/L	4.1	20	20	24.2	25.8	101	108	75-125	6	30	
Tetrahydrofuran	ug/L	<10.0	200	200	263	289	131	144	75-150	9	30	
Toluene	ug/L	<0.50	20	20	18.7	20.3	93	101	74-125	8	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	19.5	20.9	97	104	75-125	7	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	18.6	19.8	93	99	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	40.9	46.7	82	93	57-125	13	30	
Trichloroethene	ug/L	59.9	20	20	75.6	79.1	79	96	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	21.8	21.1	109	105	75-135	4	30	
Vinyl acetate	ug/L	<10.0	20	20	20.4	21.9	102	109	57-136	7	30	
Vinyl chloride	ug/L	0.34	20	20	20.1	20.0	99	98	74-141	1	30	
Xylene (Total)	ug/L	<1.5	60	60	60.6	64.5	101	108	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.						103	104	75-125			
4-Bromofluorobenzene (S)	%.						100	99	75-125			
Toluene-d8 (S)	%.						103	104	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

QC Batch: 528473 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10423643005, 10423643006

METHOD BLANK: 2868172 | Matrix: Water
Associated Lab Samples: 10423643005, 10423643006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	03/21/18 23:04	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/21/18 23:04	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/21/18 23:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/21/18 23:04	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/21/18 23:04	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/21/18 23:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/21/18 23:04	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/21/18 23:04	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/21/18 23:04	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/21/18 23:04	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/21/18 23:04	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/21/18 23:04	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/21/18 23:04	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/21/18 23:04	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/21/18 23:04	
Acetone	ug/L	<8.8	20.0	8.8	03/21/18 23:04	
Acrolein	ug/L	<4.8	10.0	4.8	03/21/18 23:04	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/21/18 23:04	
Benzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
Bromoform	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
Bromomethane	ug/L	<1.5	4.0	1.5	03/21/18 23:04	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/21/18 23:04	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/21/18 23:04	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

METHOD BLANK: 2868172 Matrix: Water
Associated Lab Samples: 10423643005, 10423643006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Chloroethane	ug/L	<0.44	1.0	0.44	03/21/18 23:04	
Chloroform	ug/L	<0.46	1.0	0.46	03/21/18 23:04	
Chloromethane	ug/L	<1.1	4.0	1.1	03/21/18 23:04	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/21/18 23:04	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/21/18 23:04	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/21/18 23:04	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/21/18 23:04	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/21/18 23:04	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/21/18 23:04	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/21/18 23:04	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Naphthalene	ug/L	<0.42	1.0	0.42	03/21/18 23:04	
o-Xylene	ug/L	<0.11	0.50	0.11	03/21/18 23:04	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Styrene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/21/18 23:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/21/18 23:04	
Toluene	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/21/18 23:04	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/21/18 23:04	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/21/18 23:04	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/21/18 23:04	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/21/18 23:04	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		03/21/18 23:04	
4-Bromofluorobenzene (S)	%.	101	75-125		03/21/18 23:04	
Toluene-d8 (S)	%.	104	75-125		03/21/18 23:04	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	20.4	102	102	75-125	0	30	
1,1,1-Trichloroethane	ug/L	20	20.0	19.2	100	96	75-125	4	30	
1,1,2,2-Tetrachloroethane	ug/L	20	22.1	21.7	111	108	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	21.7	20.9	108	104	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.5	20.3	108	101	72-125	6	30	
1,1-Dichloroethane	ug/L	20	20.2	19.8	101	99	75-125	2	30	
1,1-Dichloroethene	ug/L	20	20.1	19.0	101	95	73-125	6	30	
1,1-Dichloropropene	ug/L	20	20.5	19.6	102	98	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	21.6	21.6	108	108	72-130	0	30	
1,2,3-Trichloropropane	ug/L	20	22.1	21.1	110	105	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	20	22.2	22.2	111	111	75-125	0	30	
1,2,4-Trimethylbenzene	ug/L	20	21.3	20.8	107	104	75-125	3	30	
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	53.1	106	106	64-133	0	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	21.1	109	105	75-125	3	30	
1,2-Dichlorobenzene	ug/L	20	21.2	20.9	106	104	75-125	2	30	
1,2-Dichloroethane	ug/L	20	19.7	19.6	98	98	75-125	0	30	
1,2-Dichloroethene (Total)	ug/L	40	40.0	39.4	100	98	75-125	1	30	
1,2-Dichloropropane	ug/L	20	19.1	19.2	96	96	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	20	21.3	20.6	106	103	75-125	3	30	
1,3-Dichlorobenzene	ug/L	20	21.9	21.5	109	108	75-125	2	30	
1,3-Dichloropropane	ug/L	20	20.8	19.9	104	100	75-125	5	30	
1,4-Dichlorobenzene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	427	393	107	98	75-125	8	30	
2,2,4-Trimethylpentane	ug/L	20	21.6	20.3	108	102	64-130	6	30	
2,2-Dichloropropane	ug/L	20	19.8	19.6	99	98	68-129	1	30	
2-Butanone (MEK)	ug/L	100	94.3	91.5	94	91	65-126	3	30	
2-Chlorotoluene	ug/L	20	20.5	19.8	102	99	75-125	3	30	
2-Hexanone	ug/L	100	108	105	108	105	75-134	3	30	
4-Chlorotoluene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	101	105	101	75-131	4	30	
Acetone	ug/L	100	127	109	127	109	68-150	15	30	
Acrolein	ug/L	200	205	198	103	99	63-149	3	30	
Acrylonitrile	ug/L	200	192	186	96	93	75-125	3	30	
Benzene	ug/L	20	19.7	19.4	98	97	75-125	1	30	
Bromobenzene	ug/L	20	21.9	21.6	109	108	75-125	1	30	
Bromochloromethane	ug/L	20	20.2	19.5	101	97	75-125	4	30	
Bromodichloromethane	ug/L	20	19.0	18.9	95	95	75-125	0	30	
Bromoform	ug/L	20	19.7	19.2	99	96	70-125	3	30	
Bromomethane	ug/L	20	6.3	7.9	32	40	30-145	23	30	CL
Carbon disulfide	ug/L	20	19.1	18.3	95	91	67-125	4	30	
Carbon tetrachloride	ug/L	20	19.9	19.5	100	98	75-125	2	30	
Chlorobenzene	ug/L	20	20.3	19.9	101	100	75-125	2	30	
Chloroethane	ug/L	20	19.1	19.4	95	97	73-131	2	30	
Chloroform	ug/L	20	19.2	18.7	96	93	75-125	3	30	
Chloromethane	ug/L	20	14.6	14.3	73	72	52-132	1	30	
cis-1,2-Dichloroethene	ug/L	20	19.9	19.9	99	100	75-125	0	30	
cis-1,3-Dichloropropene	ug/L	20	18.3	18.6	92	93	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	21.0	20.5	105	102	75-125	2	30	
Dibromomethane	ug/L	20	20.0	19.9	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	20	19.2	19.0	96	95	64-127	1	30	
Dichlorofluoromethane	ug/L	20	18.9	19.0	94	95	75-125	1	30	
Diisopropyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Ethyl-tert-butyl ether	ug/L	20	19.7	19.4	99	97	75-125	1	30	
Ethylbenzene	ug/L	20	21.0	20.1	105	100	75-125	4	30	
Hexachloro-1,3-butadiene	ug/L	20	21.3	21.8	107	109	75-130	2	30	
Isopropylbenzene (Cumene)	ug/L	20	20.8	20.4	104	102	75-125	2	30	
m&p-Xylene	ug/L	40	43.5	42.5	109	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Methylene Chloride	ug/L	20	19.7	19.4	99	97	72-125	2	30	
n-Butylbenzene	ug/L	20	21.2	21.1	106	105	75-125	1	30	
n-Propylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Naphthalene	ug/L	20	21.0	21.1	105	105	61-136	0	30	
o-Xylene	ug/L	20	21.4	20.8	107	104	75-125	3	30	
p-Isopropyltoluene	ug/L	20	21.3	21.0	107	105	75-125	1	30	
sec-Butylbenzene	ug/L	20	20.6	20.6	103	103	75-125	0	30	
Styrene	ug/L	20	21.7	20.9	108	104	75-125	4	30	
tert-Amylmethyl ether	ug/L	20	19.5	18.8	98	94	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	221	223	110	112	75-125	1	30	
tert-Butylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Tetrachloroethene	ug/L	20	20.7	20.0	104	100	75-125	4	30	
Tetrahydrofuran	ug/L	200	272	246	136	123	64-150	10	30	
Toluene	ug/L	20	20.0	19.6	100	98	75-125	2	30	
trans-1,2-Dichloroethene	ug/L	20	20.1	19.5	101	97	75-125	3	30	
trans-1,3-Dichloropropene	ug/L	20	20.4	20.4	102	102	75-125	0	30	
trans-1,4-Dichloro-2-butene	ug/L	50	47.2	46.6	94	93	57-126	1	30	
Trichloroethene	ug/L	20	20.1	19.5	100	97	75-125	3	30	
Trichlorofluoromethane	ug/L	20	20.1	20.5	101	102	74-126	2	30	
Vinyl acetate	ug/L	20	20.4	20.5	102	102	72-129	0	30	
Vinyl chloride	ug/L	20	18.3	18.4	91	92	71-130	1	30	
Xylene (Total)	ug/L	60	64.9	63.3	108	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.				107	104	75-125			
4-Bromofluorobenzene (S)	%.				100	99	75-125			
Toluene-d8 (S)	%.				105	105	75-125			

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	<0.15	20	21.1	106	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	22.2	111	75-125	
1,1,2-Trichloroethane	ug/L	<0.22	20	21.1	105	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	22.8	114	75-136	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	20.5	102	75-125	
1,1-Dichloroethene	ug/L	<0.18	20	21.0	105	75-127	
1,1-Dichloropropene	ug/L	<0.18	20	21.5	108	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	23.0	115	72-137	
1,2,3-Trichloropropane	ug/L	<0.66	20	21.4	107	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	23.1	116	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	22.3	111	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	55.5	111	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	21.5	107	75-125	
1,2-Dichlorobenzene	ug/L	<0.21	20	22.0	110	75-125	
1,2-Dichloroethane	ug/L	<0.15	20	19.4	97	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	<0.62	20	19.3	97	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	21.8	109	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	22.2	111	75-125	
1,3-Dichloropropane	ug/L	<0.13	20	19.9	99	75-125	
1,4-Dichlorobenzene	ug/L	<0.10	20	21.8	109	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	377	94	67-128	
2,2,4-Trimethylpentane	ug/L	<1.3	20	22.9	114	65-150	
2,2-Dichloropropane	ug/L	<0.40	20	20.8	104	65-136	
2-Butanone (MEK)	ug/L	<2.4	100	89.0	89	59-125	
2-Chlorotoluene	ug/L	<0.20	20	21.4	107	73-126	
2-Hexanone	ug/L	<2.5	100	104	104	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.5	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	102	102	73-125	
Acetone	ug/L	<8.8	100	129	129	75-150	
Acrolein	ug/L	<4.8	200	190	95	53-150	
Acrylonitrile	ug/L	<4.9	200	184	92	69-127	
Benzene	ug/L	<0.13	20	20.3	101	74-125	
Bromobenzene	ug/L	<0.16	20	22.3	111	75-125	
Bromochloromethane	ug/L	<0.38	20	20.3	101	75-125	
Bromodichloromethane	ug/L	<0.20	20	19.5	97	75-125	
Bromoform	ug/L	<1.0	20	20.1	101	68-125	
Bromomethane	ug/L	<1.5	20	9.3	47	37-149	CL
Carbon disulfide	ug/L	<0.37	20	20.0	99	66-139	
Carbon tetrachloride	ug/L	99.5	20	121	106	75-127	
Chlorobenzene	ug/L	<0.14	20	20.7	104	75-125	
Chloroethane	ug/L	<0.44	20	19.0	95	73-134	
Chloroform	ug/L	7.5	20	26.6	96	71-125	
Chloromethane	ug/L	<1.1	20	14.0	70	58-133	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20.7	104	75-125	
cis-1,3-Dichloropropene	ug/L	<0.12	20	18.6	93	71-125	
Dibromochloromethane	ug/L	<0.13	20	21.2	106	75-125	
Dibromomethane	ug/L	<0.50	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	<0.31	20	19.9	100	70-150	
Dichlorofluoromethane	ug/L	<0.38	20	19.1	95	75-126	
Diisopropyl ether	ug/L	<0.12	20	19.5	97	66-131	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	19.7	98	74-125	
Ethylbenzene	ug/L	<0.14	20	21.1	105	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	24.5	123	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	21.5	108	75-125	
m&p-Xylene	ug/L	<0.24	40	44.3	111	75-125	
Methyl-tert-butyl ether	ug/L	<0.14	20	19.4	97	75-125	
Methylene Chloride	ug/L	<1.2	20	20.0	100	72-125	
n-Butylbenzene	ug/L	<0.13	20	23.2	116	73-140	
n-Propylbenzene	ug/L	<0.12	20	22.6	113	75-126	
Naphthalene	ug/L	<0.42	20	21.5	108	61-136	
o-Xylene	ug/L	<0.11	20	21.4	107	75-125	
p-Isopropyltoluene	ug/L	<0.14	20	22.3	111	73-133	
sec-Butylbenzene	ug/L	<0.12	20	22.1	111	75-132	
Styrene	ug/L	<0.14	20	20.6	103	71-125	
tert-Amylmethyl ether	ug/L	<0.12	20	19.0	95	71-125	
tert-Butyl Alcohol	ug/L	<2.2	200	230	115	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.2	111	75-126	
Tetrachloroethene	ug/L	<0.16	20	21.9	110	75-125	
Tetrahydrofuran	ug/L	<4.3	200	291	145	75-150	
Toluene	ug/L	<0.17	20	20.2	101	74-125	
trans-1,2-Dichloroethene	ug/L	<0.21	20	21.0	105	75-125	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20.7	103	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	48.0	96	57-125	
Trichloroethene	ug/L	<0.18	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.13	20	20.8	104	75-135	
Vinyl acetate	ug/L	<1.5	20	19.8	99	57-136	
Vinyl chloride	ug/L	<0.096	20	19.2	96	74-141	
Xylene (Total)	ug/L	<0.24	60	65.8	110	75-125	
1,2-Dichloroethane-d4 (S)	%.				103	75-125	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				105	75-125	

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	CL
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	<0.20	<0.20		30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	106	105	2		
4-Bromofluorobenzene (S)	%.	101	102	0		
Toluene-d8 (S)	%.	105	102	2		

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QUALIFIERS

Project:	1497 UPRR_Freeman
Pace Project No.:	10423643

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 528473

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10423643

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423643001	**MW9D-GW-031318**	EPA 8260B	528333		
10423643002	**MW19D-GW-031318**	EPA 8260B	528333		
10423643003	**MW5D-GW-031318**	EPA 8260B	528333		
10423643004	**MW14D-GW-031318**	EPA 8260B	528333		
10423643005	**MW17D-GW-031318**	EPA 8260B	528473		
10423643006	**Trip Blank**	EPA 8260B	528473		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b

WO#: 10423643

10423643

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: UPRR_Freeman	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	MW90-GW-031318	WT	G	3/13	1635	—	—	—	3				X				X													001
2	MW190-GW-031318	↓	↓	↓	1725	↓	↓	↓	3				X				X													002
3	MW50-GW-031318	↓	↓	↓	1145	↓	↓	↓	3				X				X													003
4	MW140-GW-031318	↓	↓	↓	1355	↓	↓	↓	3				X				X													004
5	MW170-GW-031318	↓	↓	↓	1025	↓	↓	↓	3				X				X													005
6	Trip Blank	↓	—	↓	—	↓	↓	↓	2				X				X													006
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/14/18	1430	[signature] / Pace	3/15/18	1015	4.2	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/13/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill **Project #:**

WO#: 10423643
PM: JMG Due Date: 03/29/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9638 1606

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other: **Temp Blank?** ☒Yes ☐No

Thermometer Used: ☒151401163 ☐G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 4.2 **Cooler Temp Corrected (°C):** 4.2 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** ME 3/15/18

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: Wt	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15. 2 Trip Blanks with No Custody Seals
Trip Blank Custody Seals Present?	☐Yes	☒No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1048	Temp: 4.2	Corrected Temp: 4.2
Time: 1055	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/15/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 27, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423831

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423831001	**MW9U-GW-031418**	Water	03/14/18 10:00	03/16/18 09:30
10423831002	**MW3D-GW-031418**	Water	03/14/18 11:55	03/16/18 09:30
10423831003	**W26-GW-031418**	Water	03/14/18 13:25	03/16/18 09:30
10423831004	**MW13S-GW-031418**	Water	03/14/18 16:10	03/16/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423831001	**MW9U-GW-031418**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423831002	**MW3D-GW-031418**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423831003	**W26-GW-031418**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10423831004	**MW13S-GW-031418**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423831001	**MW9U-GW-031418**					
RSK 175	Methane	3.4J	ug/L	10.0	03/19/18 11:10	
EPA 6010D	Barium, Dissolved	27.3	ug/L	10.0	03/22/18 10:36	
EPA 6010D	Calcium, Dissolved	53100	ug/L	500	03/22/18 10:36	
EPA 6010D	Chromium, Dissolved	1.5J	ug/L	10.0	03/22/18 10:36	
EPA 6010D	Iron, Dissolved	22.8J	ug/L	50.0	03/22/18 10:36	
EPA 6010D	Magnesium, Dissolved	14100	ug/L	500	03/22/18 10:36	
EPA 6010D	Manganese, Dissolved	6.6	ug/L	5.0	03/22/18 10:36	
EPA 6010D	Nickel, Dissolved	16.3J	ug/L	20.0	03/22/18 10:36	
EPA 6010D	Potassium, Dissolved	2610	ug/L	2500	03/22/18 10:36	
EPA 6010D	Sodium, Dissolved	29300	ug/L	1000	03/22/18 10:36	
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	03/22/18 10:36	
EPA 6010D	Zinc, Dissolved	4.1J	ug/L	20.0	03/22/18 10:36	
SM 2320B	Alkalinity, Total as CaCO3	155	mg/L	5.0	03/22/18 11:22	
SM 2540C	Total Dissolved Solids	334	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	35.5	mg/L	1.2	03/16/18 11:08	
EPA 300.0	Nitrate as N	5.6	mg/L	0.10	03/16/18 11:08	H1
EPA 300.0	Sulfate	30.8	mg/L	1.2	03/16/18 11:08	
EPA 353.2	Nitrogen, NO2 plus NO3	5.9	mg/L	0.20	03/21/18 13:14	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	03/20/18 20:55	
10423831002	**MW3D-GW-031418**					
RSK 175	Methane	2.5J	ug/L	10.0	03/19/18 11:17	
EPA 6010D	Aluminum, Dissolved	36.1J	ug/L	200	03/22/18 10:50	
EPA 6010D	Barium, Dissolved	44.1	ug/L	10.0	03/22/18 10:50	
EPA 6010D	Calcium, Dissolved	32000	ug/L	500	03/22/18 10:50	
EPA 6010D	Iron, Dissolved	41.0J	ug/L	50.0	03/22/18 10:50	
EPA 6010D	Magnesium, Dissolved	9540	ug/L	500	03/22/18 10:50	
EPA 6010D	Manganese, Dissolved	8.4	ug/L	5.0	03/22/18 10:50	
EPA 6010D	Potassium, Dissolved	1310J	ug/L	2500	03/22/18 10:50	
EPA 6010D	Sodium, Dissolved	13000	ug/L	1000	03/22/18 10:50	
EPA 6010D	Vanadium, Dissolved	1.6J	ug/L	15.0	03/22/18 10:50	
EPA 6010D	Zinc, Dissolved	2.1J	ug/L	20.0	03/22/18 10:50	
SM 2320B	Alkalinity, Total as CaCO3	145	mg/L	5.0	03/22/18 11:25	
SM 2540C	Total Dissolved Solids	188	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	1.4	mg/L	1.2	03/16/18 10:52	B
EPA 300.0	Nitrate as N	0.15	mg/L	0.10	03/16/18 10:52	
EPA 300.0	Sulfate	2.6	mg/L	1.2	03/16/18 10:52	
EPA 353.2	Nitrogen, NO2 plus NO3	0.17	mg/L	0.020	03/21/18 12:48	
SM 5310C	Total Organic Carbon	0.36J	mg/L	1.0	03/20/18 21:36	
10423831003	**W26-GW-031418**					
RSK 175	Methane	2.6J	ug/L	10.0	03/19/18 11:24	
EPA 6010D	Barium, Dissolved	6.3J	ug/L	10.0	03/22/18 10:53	
EPA 6010D	Calcium, Dissolved	37900	ug/L	500	03/22/18 10:53	
EPA 6010D	Magnesium, Dissolved	11200	ug/L	500	03/22/18 10:53	
EPA 6010D	Potassium, Dissolved	2320J	ug/L	2500	03/22/18 10:53	
EPA 6010D	Sodium, Dissolved	12900	ug/L	1000	03/22/18 10:53	
EPA 6010D	Vanadium, Dissolved	7.5J	ug/L	15.0	03/22/18 10:53	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423831003	**W26-GW-031418**					
EPA 6010D	Zinc, Dissolved	56.0	ug/L	20.0	03/22/18 10:53	
SM 2320B	Alkalinity, Total as CaCO3	150	mg/L	5.0	03/22/18 11:30	
SM 2540C	Total Dissolved Solids	226	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	4.6	mg/L	1.2	03/16/18 11:23	
EPA 300.0	Nitrate as N	2.4	mg/L	0.10	03/16/18 11:23	
EPA 300.0	Sulfate	10.7	mg/L	1.2	03/16/18 11:23	
EPA 353.2	Nitrogen, NO2 plus NO3	2.6	mg/L	0.10	03/21/18 13:19	
SM 5310C	Total Organic Carbon	0.77J	mg/L	1.0	03/20/18 21:50	
10423831004	**MW13S-GW-031418**					
RSK 175	Methane	2.8J	ug/L	10.0	03/20/18 09:54	
EPA 6010D	Barium, Dissolved	70.4	ug/L	10.0	03/22/18 10:55	
EPA 6010D	Calcium, Dissolved	38400	ug/L	500	03/22/18 10:55	
EPA 6010D	Chromium, Dissolved	0.76J	ug/L	10.0	03/22/18 10:55	
EPA 6010D	Magnesium, Dissolved	11300	ug/L	500	03/22/18 10:55	
EPA 6010D	Potassium, Dissolved	1290J	ug/L	2500	03/22/18 10:55	
EPA 6010D	Sodium, Dissolved	15800	ug/L	1000	03/22/18 10:55	
EPA 6010D	Vanadium, Dissolved	8.8J	ug/L	15.0	03/22/18 10:55	
EPA 6010D	Zinc, Dissolved	3.2J	ug/L	20.0	03/22/18 10:55	
SM 2320B	Alkalinity, Total as CaCO3	172	mg/L	5.0	03/22/18 11:34	
SM 2540C	Total Dissolved Solids	215	mg/L	10.0	03/19/18 15:30	
EPA 300.0	Chloride	1.2J	mg/L	1.2	03/16/18 11:38	B
EPA 300.0	Nitrate as N	0.22	mg/L	0.10	03/16/18 11:38	
EPA 300.0	Sulfate	4.6	mg/L	1.2	03/16/18 11:38	
EPA 353.2	Nitrogen, NO2 plus NO3	0.26	mg/L	0.020	03/21/18 12:52	
SM 5310C	Total Organic Carbon	0.57J	mg/L	1.0	03/20/18 22:04	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 528126

R1: RPD value was outside control limits.
- DUP (Lab ID: 2866250)
  - Methane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423831

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 104604

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2072835001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 450744)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- MW9U-GW-031418 (Lab ID: 10423831001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 527685

B: Analyte was detected in the associated method blank.
- BLANK for HBN 527685 [WETA/345 (Lab ID: 2862671)
  - Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527685

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10423587001,10423587002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2862673)
  - Chloride
  - Sulfate
- MS (Lab ID: 2862675)
  - Chloride
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 2862674)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2862676)
  - Chloride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423831

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423831

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW9U-GW-031418 **Lab ID: 10423831001** Collected: 03/14/18 10:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 11:10	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 11:10	74-85-1	
Methane	**3.4J**	ug/L	10.0	1.1	1		03/19/18 11:10	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 10:36	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 10:36	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 10:36	7440-38-2	
Barium, Dissolved	**27.3**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 10:36	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 10:36	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 10:36	7440-43-9	
Calcium, Dissolved	**53100**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 10:36	7440-70-2	
Chromium, Dissolved	**1.5J**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 10:36	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 10:36	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 10:36	7440-50-8	
Iron, Dissolved	**22.8J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 10:36	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 10:36	7439-92-1	
Magnesium, Dissolved	**14100**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 10:36	7439-95-4	
Manganese, Dissolved	**6.6**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 10:36	7439-96-5	
Nickel, Dissolved	**16.3J**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 10:36	7440-02-0	
Potassium, Dissolved	**2610**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 10:36	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 10:36	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 10:36	7440-22-4	
Sodium, Dissolved	**29300**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 10:36	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 10:36	7440-28-0	
Vanadium, Dissolved	**5.8J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 10:36	7440-62-2	
Zinc, Dissolved	**4.1J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 10:36	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:29	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**155**	mg/L	5.0	1.4	1		03/22/18 11:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**334**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/20/18 11:29	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**35.5**	mg/L	1.2	0.14	1		03/16/18 11:08	16887-00-6	
Nitrate as N	**5.6**	mg/L	0.10	0.0079	1		03/16/18 11:08	14797-55-8	H1
Sulfate	**30.8**	mg/L	1.2	0.27	1		03/16/18 11:08	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW9U-GW-031418 **Lab ID: 10423831001** Collected: 03/14/18 10:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.9**	mg/L	0.20	0.075	10		03/21/18 13:14		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:52		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		03/20/18 20:55	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW3D-GW-031418 **Lab ID: 10423831002** Collected: 03/14/18 11:55 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 11:17	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 11:17	74-85-1	
Methane	**2.5J**	ug/L	10.0	1.1	1		03/19/18 11:17	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**36.1J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 10:50	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 10:50	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 10:50	7440-38-2	
Barium, Dissolved	**44.1**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 10:50	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 10:50	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 10:50	7440-43-9	
Calcium, Dissolved	**32000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 10:50	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 10:50	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 10:50	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 10:50	7440-50-8	
Iron, Dissolved	**41.0J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 10:50	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 10:50	7439-92-1	
Magnesium, Dissolved	**9540**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 10:50	7439-95-4	
Manganese, Dissolved	**8.4**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 10:50	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 10:50	7440-02-0	
Potassium, Dissolved	**1310J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 10:50	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 10:50	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 10:50	7440-22-4	
Sodium, Dissolved	**13000**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 10:50	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 10:50	7440-28-0	
Vanadium, Dissolved	**1.6J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 10:50	7440-62-2	
Zinc, Dissolved	**2.1J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 10:50	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:31	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**145**	mg/L	5.0	1.4	1		03/22/18 11:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**188**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/20/18 11:30	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		03/16/18 10:52	16887-00-6	B
Nitrate as N	**0.15**	mg/L	0.10	0.0079	1		03/16/18 10:52	14797-55-8	
Sulfate	**2.6**	mg/L	1.2	0.27	1		03/16/18 10:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW3D-GW-031418 **Lab ID: 10423831002** Collected: 03/14/18 11:55 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.17**	mg/L	0.020	0.0075	1		03/21/18 12:48		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:52		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.36J**	mg/L	1.0	0.20	1		03/20/18 21:36	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: W26-GW-031418 **Lab ID: 10423831003** Collected: 03/14/18 13:25 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/19/18 11:24	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/19/18 11:24	74-85-1	
Methane	**2.6J**	ug/L	10.0	1.1	1		03/19/18 11:24	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 10:53	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 10:53	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 10:53	7440-38-2	
Barium, Dissolved	**6.3J**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 10:53	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 10:53	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 10:53	7440-43-9	
Calcium, Dissolved	**37900**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 10:53	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 10:53	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 10:53	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 10:53	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 10:53	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 10:53	7439-92-1	
Magnesium, Dissolved	**11200**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 10:53	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 10:53	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 10:53	7440-02-0	
Potassium, Dissolved	**2320J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 10:53	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 10:53	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 10:53	7440-22-4	
Sodium, Dissolved	**12900**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 10:53	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 10:53	7440-28-0	
Vanadium, Dissolved	**7.5J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 10:53	7440-62-2	
Zinc, Dissolved	**56.0**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 10:53	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:38	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**150**	mg/L	5.0	1.4	1		03/22/18 11:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**226**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/20/18 11:31	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.6**	mg/L	1.2	0.14	1		03/16/18 11:23	16887-00-6	
Nitrate as N	**2.4**	mg/L	0.10	0.0079	1		03/16/18 11:23	14797-55-8	
Sulfate	**10.7**	mg/L	1.2	0.27	1		03/16/18 11:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: W26-GW-031418 **Lab ID: 10423831003** Collected: 03/14/18 13:25 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.6**	mg/L	0.10	0.037	5		03/21/18 13:19		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:52		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.77J**	mg/L	1.0	0.20	1		03/20/18 21:50	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW13S-GW-031418 **Lab ID: 10423831004** Collected: 03/14/18 16:10 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/20/18 09:54	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/20/18 09:54	74-85-1	
Methane	**2.8J**	ug/L	10.0	1.1	1		03/20/18 09:54	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 10:55	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 10:55	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 10:55	7440-38-2	
Barium, Dissolved	**70.4**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 10:55	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 10:55	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 10:55	7440-43-9	
Calcium, Dissolved	**38400**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 10:55	7440-70-2	
Chromium, Dissolved	**0.76J**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 10:55	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 10:55	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 10:55	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 10:55	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 10:55	7439-92-1	
Magnesium, Dissolved	**11300**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 10:55	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 10:55	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 10:55	7440-02-0	
Potassium, Dissolved	**1290J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 10:55	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 10:55	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 10:55	7440-22-4	
Sodium, Dissolved	**15800**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 10:55	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 10:55	7440-28-0	
Vanadium, Dissolved	**8.8J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 10:55	7440-62-2	
Zinc, Dissolved	**3.2J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 10:55	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:41	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**172**	mg/L	5.0	1.4	1		03/22/18 11:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**215**	mg/L	10.0	5.0	1		03/19/18 15:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/20/18 11:32	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.14	1		03/16/18 11:38	16887-00-6	B
Nitrate as N	**0.22**	mg/L	0.10	0.0079	1		03/16/18 11:38	14797-55-8	
Sulfate	**4.6**	mg/L	1.2	0.27	1		03/16/18 11:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Sample: MW13S-GW-031418 **Lab ID: 10423831004** Collected: 03/14/18 16:10 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.26**	mg/L	0.020	0.0075	1		03/21/18 12:52		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:53		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.57J**	mg/L	1.0	0.20	1		03/20/18 22:04	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 527919 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10423831001, 10423831002, 10423831003

METHOD BLANK: 2865174 | Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/19/18 08:14	
Ethene	ug/L	<0.68	10.0	0.68	03/19/18 08:14	
Methane	ug/L	3.6J	10.0	1.1	03/19/18 08:14	

LABORATORY CONTROL SAMPLE & LCSD: 2865175 2865176

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	3	20	
Ethene	ug/L	106	104	101	98	95	85-115	3	20	
Methane	ug/L	60.7	60.0	57.4	99	95	85-115	4	20	

SAMPLE DUPLICATE: 2865177

Parameter	Units	10423463001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	3.0J	3.1J		20	

SAMPLE DUPLICATE: 2865178

Parameter	Units	10423642003 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	4.0J	1.4J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 528126 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10423831004

METHOD BLANK: 2866246 Matrix: Water
Associated Lab Samples: 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/20/18 09:39	
Ethene	ug/L	<0.68	10.0	0.68	03/20/18 09:39	
Methane	ug/L	2.4J	10.0	1.1	03/20/18 09:39	

LABORATORY CONTROL SAMPLE & LCSD: 2866247 2866248

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	2	20	
Ethene	ug/L	106	103	101	97	95	85-115	3	20	
Methane	ug/L	60.7	58.7	57.9	97	95	85-115	1	20	

SAMPLE DUPLICATE: 2866250

Parameter	Units	10424007015 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	160	744	129	20	R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 527904 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2865135 | Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/22/18 18:25	

LABORATORY CONTROL SAMPLE: 2865136

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865137 2865138

Parameter	Units	10423831002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.4	5.5	108	109	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 527900 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2865119 Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/22/18 10:30	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/22/18 10:30	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/22/18 10:30	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/22/18 10:30	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/22/18 10:30	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/22/18 10:30	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/22/18 10:30	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/22/18 10:30	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/22/18 10:30	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/22/18 10:30	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/22/18 10:30	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/22/18 10:30	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/22/18 10:30	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/22/18 10:30	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/22/18 10:30	
Potassium, Dissolved	ug/L	<126	2500	126	03/22/18 10:30	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/22/18 10:30	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/22/18 10:30	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/22/18 10:30	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/22/18 10:30	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/22/18 10:30	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/22/18 10:30	

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21300	107	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	995	99	80-120	
Iron, Dissolved	ug/L	20000	20400	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Magnesium, Dissolved	ug/L	20000	20200	101	80-120	
Manganese, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20100	100	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	494	99	80-120	
Sodium, Dissolved	ug/L	20000	20000	100	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	986	99	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865121 2865122

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21300	21500	107	108	75-125	1	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1040	1040	103	103	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	102	104	75-125	1	20	
Barium, Dissolved	ug/L	27.3	1000	1000	1050	1050	102	103	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	1	20	
Calcium, Dissolved	ug/L	53100	20000	20000	72100	71600	95	93	75-125	1	20	
Chromium, Dissolved	ug/L	1.5J	1000	1000	1000	1010	100	101	75-125	1	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	996	1000	100	100	75-125	1	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	996	1010	100	101	75-125	1	20	
Iron, Dissolved	ug/L	22.8J	20000	20000	20200	20400	101	102	75-125	1	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1020	101	102	75-125	1	20	
Magnesium, Dissolved	ug/L	14100	20000	20000	34200	34300	100	101	75-125	0	20	
Manganese, Dissolved	ug/L	6.6	1000	1000	1020	1030	102	102	75-125	1	20	
Nickel, Dissolved	ug/L	16.3J	1000	1000	1010	1020	99	100	75-125	1	20	
Potassium, Dissolved	ug/L	2610	20000	20000	23500	23600	104	105	75-125	0	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1060	1060	106	106	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	494	498	99	100	75-125	1	20	
Sodium, Dissolved	ug/L	29300	20000	20000	48700	48700	97	97	75-125	0	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	990	998	99	99	75-125	1	20	
Vanadium, Dissolved	ug/L	5.8J	1000	1000	989	997	98	99	75-125	1	20	
Zinc, Dissolved	ug/L	4.1J	1000	1000	1000	1010	100	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 528547 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2868578 | Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1.5J	5.0	1.4	03/22/18 10:10	

LABORATORY CONTROL SAMPLE & LCSD: 2868579 | 2868580

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.6	42.7	106	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868581 | 2868582

Parameter	Units	10423965005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	505	40	40	552	546	115	101	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868583 | 2868584

Parameter	Units	10424009002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	512000 ug/L	40	40	557	557	113	112	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 527922 — Analysis Method: SM 2540C
QC Batch Method: SM 2540C — Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2865184 — Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/19/18 15:30	

LABORATORY CONTROL SAMPLE: 2865185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	978	98	80-120	

SAMPLE DUPLICATE: 2865186

Parameter	Units	10423371001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2140	2140	0	10	

SAMPLE DUPLICATE: 2865187

Parameter	Units	10423477001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1660	1700	2	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 104604 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 450741 Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/20/18 11:21	

LABORATORY CONTROL SAMPLE: 450742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.22	110	90-110	

MATRIX SPIKE SAMPLE: 450744

Parameter	Units	2072835001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.051	25	75-125	M1

SAMPLE DUPLICATE: 450743

Parameter	Units	2072835001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 527685 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2862671 — Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.27J	1.2	0.14	03/16/18 11:53	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/16/18 11:53	
Sulfate	mg/L	<0.27	1.2	0.27	03/16/18 11:53	

LABORATORY CONTROL SAMPLE: 2862672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.4	99	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	12.3	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2862673 2862674

Parameter	Units	10423587001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	18.8	12.5	12.5	29.0	29.2	81	83	90-110	1	20	M1
Nitrate as N	mg/L	ND	1	1	1.0	1.0	92	93	90-110	1	20	
Sulfate	mg/L	17.3	12.5	12.5	28.0	28.1	86	87	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2862675 2862676

Parameter	Units	10423587002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	69.9	12.5	12.5	74.6	75.0	38	41	90-110	1	20	M1
Nitrate as N	mg/L	1.3	1	1	2.2	2.2	88	90	90-110	1	20	M1
Sulfate	mg/L	25.9	12.5	12.5	35.9	36.1	80	81	90-110	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 528131
Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2866254 Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/21/18 13:11	FS

LABORATORY CONTROL SAMPLE: 2866255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866256 2866257

Parameter	Units	10424020001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.95	1	1	1.9	1.9	96	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866258 2866259

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.9	10	10	15.3	15.2	94	93	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 529034 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 2871214 Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/26/18 15:47	

LABORATORY CONTROL SAMPLE: 2871215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	301	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871216 2871217

Parameter	Units	10423642004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	16.4J	250	250	283	270	107	102	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871218 2871219

Parameter	Units	10423642005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	52.2	250	250	308	308	102	103	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

QC Batch: 138929 — Analysis Method: SM 5310C
QC Batch Method: SM 5310C — Analysis Description: 5310C TOC
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

METHOD BLANK: 550472 — Matrix: Water
Associated Lab Samples: 10423831001, 10423831002, 10423831003, 10423831004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/20/18 18:47	

LABORATORY CONTROL SAMPLE: 550473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550474 550475

Parameter	Units	10423642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.77J	25	25	27.7	27.7	108	108	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
FS	The sample was filtered in the laboratory prior to analysis.
H1	Analysis conducted outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423831

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423831001	**MW9U-GW-031418**	RSK 175	527919		
10423831002	**MW3D-GW-031418**	RSK 175	527919		
10423831003	**W26-GW-031418**	RSK 175	527919		
10423831004	**MW13S-GW-031418**	RSK 175	528126		
10423831001	**MW9U-GW-031418**	EPA 3010	527900	EPA 6010D	528178
10423831002	**MW3D-GW-031418**	EPA 3010	527900	EPA 6010D	528178
10423831003	**W26-GW-031418**	EPA 3010	527900	EPA 6010D	528178
10423831004	**MW13S-GW-031418**	EPA 3010	527900	EPA 6010D	528178
10423831001	**MW9U-GW-031418**	EPA 7470A	527904	EPA 7470A	528184
10423831002	**MW3D-GW-031418**	EPA 7470A	527904	EPA 7470A	528184
10423831003	**W26-GW-031418**	EPA 7470A	527904	EPA 7470A	528184
10423831004	**MW13S-GW-031418**	EPA 7470A	527904	EPA 7470A	528184
10423831001	**MW9U-GW-031418**	SM 2320B	528547		
10423831002	**MW3D-GW-031418**	SM 2320B	528547		
10423831003	**W26-GW-031418**	SM 2320B	528547		
10423831004	**MW13S-GW-031418**	SM 2320B	528547		
10423831001	**MW9U-GW-031418**	SM 2540C	527922		
10423831002	**MW3D-GW-031418**	SM 2540C	527922		
10423831003	**W26-GW-031418**	SM 2540C	527922		
10423831004	**MW13S-GW-031418**	SM 2540C	527922		
10423831001	**MW9U-GW-031418**	SM 4500-S-2 D	104604		
10423831002	**MW3D-GW-031418**	SM 4500-S-2 D	104604		
10423831003	**W26-GW-031418**	SM 4500-S-2 D	104604		
10423831004	**MW13S-GW-031418**	SM 4500-S-2 D	104604		
10423831001	**MW9U-GW-031418**	EPA 300.0	527685		
10423831002	**MW3D-GW-031418**	EPA 300.0	527685		
10423831003	**W26-GW-031418**	EPA 300.0	527685		
10423831004	**MW13S-GW-031418**	EPA 300.0	527685		
10423831001	**MW9U-GW-031418**	EPA 353.2	528131		
10423831002	**MW3D-GW-031418**	EPA 353.2	528131		
10423831003	**W26-GW-031418**	EPA 353.2	528131		
10423831004	**MW13S-GW-031418**	EPA 353.2	528131		
10423831001	**MW9U-GW-031418**	EPA 410.4	529034	EPA 410.4	529119
10423831002	**MW3D-GW-031418**	EPA 410.4	529034	EPA 410.4	529119
10423831003	**W26-GW-031418**	EPA 410.4	529034	EPA 410.4	529119
10423831004	**MW13S-GW-031418**	EPA 410.4	529034	EPA 410.4	529119
10423831001	**MW9U-GW-031418**	SM 5310C	138929		
10423831002	**MW3D-GW-031418**	SM 5310C	138929		
10423831003	**W26-GW-031418**	SM 5310C	138929		
10423831004	**MW13S-GW-031418**	SM 5310C	138929		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO# : 10423831

10423831

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	MW9U-GW-031418	WT	G	3/14	1000	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X			48 hr hold!	001
2	MW3D-GW-031418	↓	↓	↓	1155	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓	002
3	~~MW~~W26-GW-031418	↓	↓	↓	1325	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓	003
4	MW13S-GW-031418	↓	↓	↓	1610	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓	004
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jonathan Espinoza / CH2M	3/15/18	1530	[signature]	3/16/18	930	3.7	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/14/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI** Document No.: **F-MN-L-210-rev.24**	Document Revised: 18Dec2017 Page 1 of 2 Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2m Hill UPRR

Project #:

WO#: 10423831
PM: JMG Due Date: 03/30/18
CLIENT: UPRR_CH2M

Courier: [x] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] SpeeDee [ ] Other:

Tracking Number: 7475 9637 6478

Custody Seal on Cooler/Box Present? [x] Yes [ ] No **Seals Intact?** [x] Yes [ ] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [x] Bubble Wrap [x] Bubble Bags [ ] None [ ] Other: **Temp Blank?** [x] Yes [ ] No

Thermometer Used: [x] 151401163 [ ] G87A9155100842 **Type of Ice:** [x] Wet [ ] Blue [ ] None [ ] Dry [ ] Melted

Cooler Temp Read (°C): 3.7 **Cooler Temp Corrected (°C):** 3.7 **Biological Tissue Frozen?** [ ] Yes [ ] No [x] NA

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** MD 3/16/18

USDA Regulated Soil ([x] N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? [ ] Yes [ ] No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? [ ] Yes [ ] No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	[x] Yes	[ ] No		1.
Chain of Custody Filled Out?	[x] Yes	[ ] No		2.
Chain of Custody Relinquished?	[x] Yes	[ ] No		3.
Sampler Name and/or Signature on COC?	[x] Yes	[ ] No	[ ] N/A	4.
Samples Arrived within Hold Time?	[x] Yes	[ ] No		5.
Short Hold Time Analysis (<72 hr)?	[x] Yes	[ ] No		6.
Rush Turn Around Time Requested?	[ ] Yes	[x] No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	[ ] Yes	[x] No		8. No MS/MSD
Correct Containers Used?	[x] Yes	[ ] No		9.
-Pace Containers Used?	[x] Yes	[ ] No		
Containers Intact?	[x] Yes	[ ] No		10.
Filtered Volume Received for Dissolved Tests?	[x] Yes	[ ] No	[ ] N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	[x] Yes	[ ] No		12.
All containers needing acid/base preservation have been checked?	[x] Yes	[ ] No	[ ] N/A	13. [x] HNO_3 [x] H_2SO_4 [x] NaOH Zn Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	[x] Yes	[ ] No	[ ] N/A	Sample # 1-4: 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC, ~~DOC, Oil and~~ Grease, DRO/8015 (water) and Dioxin. RSK MD 3/16/18 Per method, VOA pH is checked after analysis	[x] Yes	[ ] No	[ ] N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	[ ] Yes	[ ] No	[x] N/A	14.
3 Trip Blanks Present?	[ ] Yes	[ ] No	[x] N/A	15.
Trip Blank Custody Seals Present?	[ ] Yes	[ ] No	[x] N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** [ ] Yes [ ] No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1015	Temp: 3.7	Corrected Temp: 3.7
Time: 1030	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/16/18

Note: Whenever there is a discrepancy affecting North Carolina comp... form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 12105985
PM: HRZ Due Date: 03/30/18
CLIENT: Pace WA

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin:

Workorder: 10423831 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 3/16/2018 Results Requested By: 3/30/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	MW9U-GW-031418	PS	3/14/2018 10:00	10423831001	Water	2	X	
2	MW3D-GW-031418	PS	3/14/2018 11:55	10423831002	Water	2	X	
3	W26-GW-031418	PS	3/14/2018 13:25	10423831003	Water	2	X	
4	MW13S-GW-031418	PS	3/14/2018 16:10	10423831004	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	3/16/18 1750	D. Clip	3-16-18 1830
2	D. Clip	3-16-16 2245	[signature]	3/19/18 0810
3				

Comments

Cooler Temperature on Receipt 2.1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO# : 12105985
PM: HRZ Due Date: 03/30/18
CLIENT: Pace WA

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☐ Yes ☒ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.8 Cooler Temp Corrected °C: 2.1 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: 3-16-18 DC

Comments: al 3/19/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather Zito **Date:** 3/19/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

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www.pacelabs.com

Workorder: 10423831 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/16/2018 **Results Requested By:** 3/30/2018

Report To

Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To

Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

Requested Analysis

WO#: 2072743

2072743

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	MW9U-GW-031418	PS	3/14/2018 10:00	10423831001	Water	1	X	
2	MW3D-GW-031418	PS	3/14/2018 11:55	10423831002	Water	1	X	
3	W26-GW-031418	PS	3/14/2018 13:25	10423831003	Water	1	X	
4	MW13S-GW-031418	PS	3/14/2018 16:10	10423831004	Water	1	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	3/16/18 1605		
2	FedEx	3/17/18 945	[signature] PACE	3/19/18 945
3				

Comments

Cooler Temperature on Receipt 1.1 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

WO#:2072743

PM: CMM Due Date: 04/02/18

CLIENT: PASI-MINN

Pace Analytical

Sample Condition Upon Re

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☒Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 03-17-18 TB

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☐Yes ☒No ☐N/A	1
Chain of Custody Present:	☒Yes ☐No ☐N/A	2
Chain of Custody Complete:	☒Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	5
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	6
Sufficient Volume:	☒Yes ☐No ☐N/A	7
Correct Containers Used:	☒Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☐No ☒N/A	9
Sample Labels match COC:	☒Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	14
Trip Blank Present:	☐Yes ☒No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: __________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 26, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423834

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10423834001	**MW9U-GW-031418**	Water	03/14/18 10:00	03/16/18 09:30
10423834002	**MW3D-GW-031418**	Water	03/14/18 11:35	03/16/18 09:30
10423834003	**W26-GW-031418**	Water	03/14/18 13:25	03/16/18 09:30
10423834004	**MW13S-GW-031418**	Water	03/14/18 16:10	03/16/18 09:30
10423834005	**Trip Blank**	Water	03/14/18 00:00	03/16/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10423834001	**MW9U-GW-031418**	EPA 8260B	AEZ, DS2	83	PASI-M
10423834002	**MW3D-GW-031418**	EPA 8260B	AEZ	83	PASI-M
10423834003	**W26-GW-031418**	EPA 8260B	AEZ	83	PASI-M
10423834004	**MW13S-GW-031418**	EPA 8260B	AEZ	83	PASI-M
10423834005	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10423834001	**MW9U-GW-031418**					
EPA 8260B	Carbon disulfide	0.79J	ug/L	2.0	03/22/18 06:58	
EPA 8260B	Carbon tetrachloride	772	ug/L	2.5	03/22/18 15:47	
EPA 8260B	Chloroform	17.0	ug/L	2.0	03/22/18 06:58	
10423834003	**W26-GW-031418**					
EPA 8260B	Carbon tetrachloride	29.7	ug/L	0.50	03/22/18 04:36	
EPA 8260B	Chloroform	2.4	ug/L	1.0	03/22/18 04:36	
10423834005	**Trip Blank**					
EPA 8260B	Chloroform	0.59J	ug/L	1.0	03/21/18 23:51	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10423834

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

General Information:
5 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 528473

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 2868172)
  - Bromomethane
- DUP (Lab ID: 2868193)
  - Bromomethane
- LCS (Lab ID: 2868173)
  - Bromomethane
- LCSD (Lab ID: 2868192)
  - Bromomethane
- MS (Lab ID: 2868194)
  - Bromomethane
- MW13S-GW-031418 (Lab ID: 10423834004)
  - Bromomethane
- MW3D-GW-031418 (Lab ID: 10423834002)
  - Bromomethane
- MW9U-GW-031418 (Lab ID: 10423834001)
  - Bromomethane
- Trip Blank (Lab ID: 10423834005)
  - Bromomethane
- W26-GW-031418 (Lab ID: 10423834003)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2018

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528473

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW9U-GW-031418 **Lab ID: 10423834001** Collected: 03/14/18 10:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.29**	ug/L	2.0	0.29	2		03/22/18 06:58	630-20-6	
1,1,1-Trichloroethane	**<0.30**	ug/L	1.0	0.30	2		03/22/18 06:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.38**	ug/L	1.0	0.38	2		03/22/18 06:58	79-34-5	
1,1,2-Trichloroethane	**<0.44**	ug/L	1.0	0.44	2		03/22/18 06:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.55**	ug/L	2.0	0.55	2		03/22/18 06:58	76-13-1	
1,1-Dichloroethane	**<0.29**	ug/L	1.0	0.29	2		03/22/18 06:58	75-34-3	
1,1-Dichloroethene	**<0.36**	ug/L	1.0	0.36	2		03/22/18 06:58	75-35-4	
1,1-Dichloropropene	**<0.35**	ug/L	1.0	0.35	2		03/22/18 06:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.29**	ug/L	1.0	0.29	2		03/22/18 06:58	87-61-6	
1,2,3-Trichloropropane	**<1.3**	ug/L	8.0	1.3	2		03/22/18 06:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.36**	ug/L	1.0	0.36	2		03/22/18 06:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	2		03/22/18 06:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.1**	ug/L	8.0	2.1	2		03/22/18 06:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.34**	ug/L	1.0	0.34	2		03/22/18 06:58	106-93-4	
1,2-Dichlorobenzene	**<0.42**	ug/L	1.0	0.42	2		03/22/18 06:58	95-50-1	
1,2-Dichloroethane	**<0.30**	ug/L	1.0	0.30	2		03/22/18 06:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.82**	ug/L	2.0	0.82	2		03/22/18 06:58	540-59-0	
1,2-Dichloropropane	**<1.2**	ug/L	8.0	1.2	2		03/22/18 06:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.36**	ug/L	1.0	0.36	2		03/22/18 06:58	108-67-8	
1,3-Dichlorobenzene	**<0.32**	ug/L	1.0	0.32	2		03/22/18 06:58	541-73-1	
1,3-Dichloropropane	**<0.26**	ug/L	1.0	0.26	2		03/22/18 06:58	142-28-9	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	2		03/22/18 06:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<45.2**	ug/L	400	45.2	2		03/22/18 06:58	123-91-1	
2,2,4-Trimethylpentane	**<2.6**	ug/L	8.0	2.6	2		03/22/18 06:58	540-84-1	
2,2-Dichloropropane	**<0.79**	ug/L	2.0	0.79	2		03/22/18 06:58	594-20-7	
2-Butanone (MEK)	**<4.8**	ug/L	10.0	4.8	2		03/22/18 06:58	78-93-3	
2-Chlorotoluene	**<0.41**	ug/L	1.0	0.41	2		03/22/18 06:58	95-49-8	
2-Hexanone	**<5.0**	ug/L	10.0	5.0	2		03/22/18 06:58	591-78-6	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	2		03/22/18 06:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<1.1**	ug/L	10.0	1.1	2		03/22/18 06:58	108-10-1	
Acetone	**<17.7**	ug/L	40.0	17.7	2		03/22/18 06:58	67-64-1	
Acrolein	**<9.7**	ug/L	20.0	9.7	2		03/22/18 06:58	107-02-8	
Acrylonitrile	**<9.8**	ug/L	20.0	9.8	2		03/22/18 06:58	107-13-1	
Benzene	**<0.25**	ug/L	1.0	0.25	2		03/22/18 06:58	71-43-2	
Bromobenzene	**<0.31**	ug/L	1.0	0.31	2		03/22/18 06:58	108-86-1	
Bromochloromethane	**<0.76**	ug/L	2.0	0.76	2		03/22/18 06:58	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	1.0	0.40	2		03/22/18 06:58	75-27-4	
Bromoform	**<2.1**	ug/L	8.0	2.1	2		03/22/18 06:58	75-25-2	
Bromomethane	**<3.1**	ug/L	8.0	3.1	2		03/22/18 06:58	74-83-9	CL
Carbon disulfide	**0.79J**	ug/L	2.0	0.74	2		03/22/18 06:58	75-15-0	
Carbon tetrachloride	**772**	ug/L	2.5	1.0	5		03/22/18 15:47	56-23-5	
Chlorobenzene	**<0.27**	ug/L	1.0	0.27	2		03/22/18 06:58	108-90-7	
Chloroethane	**<0.88**	ug/L	2.0	0.88	2		03/22/18 06:58	75-00-3	
Chloroform	**17.0**	ug/L	2.0	0.92	2		03/22/18 06:58	67-66-3	
Chloromethane	**<2.2**	ug/L	8.0	2.2	2		03/22/18 06:58	74-87-3	
Dibromochloromethane	**<0.27**	ug/L	2.0	0.27	2		03/22/18 06:58	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW9U-GW-031418 **Lab ID: 10423834001** Collected: 03/14/18 10:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<1.0**	ug/L	2.0	1.0	2		03/22/18 06:58	74-95-3	
Dichlorodifluoromethane	**<0.63**	ug/L	2.0	0.63	2		03/22/18 06:58	75-71-8	
Dichlorofluoromethane	**<0.77**	ug/L	2.0	0.77	2		03/22/18 06:58	75-43-4	
Diisopropyl ether	**<0.25**	ug/L	2.0	0.25	2		03/22/18 06:58	108-20-3	
Ethyl-tert-butyl ether	**<0.26**	ug/L	1.0	0.26	2		03/22/18 06:58	637-92-3	
Ethylbenzene	**<0.27**	ug/L	1.0	0.27	2		03/22/18 06:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.96**	ug/L	2.0	0.96	2		03/22/18 06:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.28**	ug/L	1.0	0.28	2		03/22/18 06:58	98-82-8	
Methyl-tert-butyl ether	**<0.29**	ug/L	1.0	0.29	2		03/22/18 06:58	1634-04-4	
Methylene Chloride	**<2.3**	ug/L	8.0	2.3	2		03/22/18 06:58	75-09-2	
Naphthalene	**<0.84**	ug/L	2.0	0.84	2		03/22/18 06:58	91-20-3	
Styrene	**<0.29**	ug/L	1.0	0.29	2		03/22/18 06:58	100-42-5	
Tetrachloroethene	**<0.32**	ug/L	1.0	0.32	2		03/22/18 06:58	127-18-4	
Tetrahydrofuran	**<8.6**	ug/L	20.0	8.6	2		03/22/18 06:58	109-99-9	
Toluene	**<0.34**	ug/L	1.0	0.34	2		03/22/18 06:58	108-88-3	
Trichloroethene	**<0.36**	ug/L	0.80	0.36	2		03/22/18 06:58	79-01-6	
Trichlorofluoromethane	**<0.26**	ug/L	1.0	0.26	2		03/22/18 06:58	75-69-4	
Vinyl acetate	**<3.0**	ug/L	20.0	3.0	2		03/22/18 06:58	108-05-4	
Vinyl chloride	**<0.19**	ug/L	0.40	0.19	2		03/22/18 06:58	75-01-4	
Xylene (Total)	**<0.49**	ug/L	3.0	0.49	2		03/22/18 06:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.40**	ug/L	1.0	0.40	2		03/22/18 06:58	156-59-2	
cis-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	2		03/22/18 06:58	10061-01-5	
m&p-Xylene	**<0.49**	ug/L	2.0	0.49	2		03/22/18 06:58	179601-23-1	
n-Butylbenzene	**<0.27**	ug/L	1.0	0.27	2		03/22/18 06:58	104-51-8	
n-Propylbenzene	**<0.25**	ug/L	1.0	0.25	2		03/22/18 06:58	103-65-1	
o-Xylene	**<0.22**	ug/L	1.0	0.22	2		03/22/18 06:58	95-47-6	
p-Isopropyltoluene	**<0.28**	ug/L	1.0	0.28	2		03/22/18 06:58	99-87-6	
sec-Butylbenzene	**<0.25**	ug/L	1.0	0.25	2		03/22/18 06:58	135-98-8	
tert-Amylmethyl ether	**<0.23**	ug/L	1.0	0.23	2		03/22/18 06:58	994-05-8	
tert-Butyl Alcohol	**<4.4**	ug/L	20.0	4.4	2		03/22/18 06:58	75-65-0	
tert-Butylbenzene	**<0.29**	ug/L	1.0	0.29	2		03/22/18 06:58	98-06-6	
trans-1,2-Dichloroethene	**<0.42**	ug/L	1.0	0.42	2		03/22/18 06:58	156-60-5	
trans-1,3-Dichloropropene	**<0.27**	ug/L	1.0	0.27	2		03/22/18 06:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<5.7**	ug/L	20.0	5.7	2		03/22/18 06:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		2		03/22/18 06:58	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		2		03/22/18 06:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		2		03/22/18 06:58	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW3D-GW-031418 **Lab ID: 10423834002** Collected: 03/14/18 11:35 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 04:12	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 04:12	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 04:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 04:12	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:12	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 04:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 04:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:12	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:12	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 04:12	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 04:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:12	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 04:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 04:12	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 04:12	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 04:12	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 04:12	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:12	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 04:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 04:12	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 04:12	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 04:12	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 04:12	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:12	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:12	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:12	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:12	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 04:12	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 04:12	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:12	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 04:12	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 04:12	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 04:12	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 04:12	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW3D-GW-031418 **Lab ID: 10423834002** Collected: 03/14/18 11:35 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 04:12	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 04:12	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:12	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 04:12	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 04:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 04:12	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 04:12	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:12	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 04:12	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:12	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 04:12	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 04:12	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 04:12	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 04:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:12	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:12	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 04:12	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:12	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:12	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 04:12	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:12	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:12	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 04:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:12	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:12	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 04:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		03/22/18 04:12	17060-07-0	
Toluene-d8 (S)	107	%.	75-125		1		03/22/18 04:12	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/22/18 04:12	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: W26-GW-031418 **Lab ID: 10423834003** Collected: 03/14/18 13:25 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 04:36	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:36	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 04:36	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 04:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 04:36	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:36	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:36	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 04:36	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:36	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 04:36	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:36	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:36	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:36	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:36	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 04:36	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 04:36	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:36	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:36	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 04:36	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 04:36	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 04:36	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 04:36	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 04:36	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:36	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 04:36	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 04:36	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 04:36	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 04:36	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 04:36	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:36	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:36	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:36	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:36	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 04:36	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 04:36	75-15-0	
Carbon tetrachloride	**29.7**	ug/L	0.50	0.20	1		03/22/18 04:36	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 04:36	75-00-3	
Chloroform	**2.4**	ug/L	1.0	0.46	1		03/22/18 04:36	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 04:36	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 04:36	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: W26-GW-031418 **Lab ID: 10423834003** Collected: 03/14/18 13:25 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 04:36	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 04:36	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:36	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 04:36	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 04:36	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 04:36	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 04:36	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:36	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 04:36	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:36	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 04:36	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 04:36	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 04:36	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 04:36	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:36	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:36	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 04:36	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:36	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:36	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 04:36	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:36	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:36	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 04:36	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:36	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:36	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:36	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 04:36	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/22/18 04:36	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		03/22/18 04:36	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/22/18 04:36	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW13S-GW-031418 **Lab ID: 10423834004** Collected: 03/14/18 16:10 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 04:59	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:59	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 04:59	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 04:59	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 04:59	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:59	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:59	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 04:59	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:59	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 04:59	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:59	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:59	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:59	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:59	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 04:59	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 04:59	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 04:59	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:59	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 04:59	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 04:59	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 04:59	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 04:59	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 04:59	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:59	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 04:59	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 04:59	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 04:59	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 04:59	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 04:59	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:59	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:59	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:59	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 04:59	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 04:59	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 04:59	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:59	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 04:59	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 04:59	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 04:59	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 04:59	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: MW13S-GW-031418 **Lab ID: 10423834004** Collected: 03/14/18 16:10 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 04:59	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 04:59	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 04:59	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 04:59	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 04:59	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 04:59	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 04:59	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 04:59	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 04:59	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 04:59	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 04:59	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 04:59	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 04:59	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 04:59	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 04:59	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:59	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 04:59	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 04:59	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:59	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 04:59	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:59	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 04:59	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 04:59	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 04:59	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 04:59	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 04:59	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 04:59	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/22/18 04:59	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		03/22/18 04:59	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/22/18 04:59	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: Trip Blank **Lab ID: 10423834005** Collected: 03/14/18 00:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/21/18 23:51	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 23:51	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/21/18 23:51	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/21/18 23:51	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/21/18 23:51	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 23:51	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 23:51	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/21/18 23:51	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 23:51	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/21/18 23:51	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/21/18 23:51	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/21/18 23:51	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 23:51	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/21/18 23:51	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/21/18 23:51	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/21/18 23:51	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/21/18 23:51	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 23:51	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/21/18 23:51	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/21/18 23:51	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/21/18 23:51	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/21/18 23:51	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/21/18 23:51	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 23:51	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/21/18 23:51	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/21/18 23:51	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/21/18 23:51	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/21/18 23:51	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/21/18 23:51	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 23:51	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 23:51	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/21/18 23:51	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/21/18 23:51	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/21/18 23:51	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/21/18 23:51	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/21/18 23:51	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/21/18 23:51	75-00-3	
Chloroform	**0.59J**	ug/L	1.0	0.46	1		03/21/18 23:51	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/21/18 23:51	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/21/18 23:51	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Sample: Trip Blank **Lab ID: 10423834005** Collected: 03/14/18 00:00 Received: 03/16/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/21/18 23:51	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/21/18 23:51	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/21/18 23:51	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/21/18 23:51	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/21/18 23:51	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/21/18 23:51	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/21/18 23:51	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/21/18 23:51	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/21/18 23:51	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/21/18 23:51	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/21/18 23:51	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/21/18 23:51	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/21/18 23:51	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/21/18 23:51	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/21/18 23:51	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 23:51	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/21/18 23:51	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/21/18 23:51	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 23:51	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/21/18 23:51	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/21/18 23:51	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/21/18 23:51	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/21/18 23:51	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/21/18 23:51	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/21/18 23:51	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/21/18 23:51	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/21/18 23:51	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		03/21/18 23:51	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		03/21/18 23:51	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		03/21/18 23:51	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

QC Batch: 528473 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10423834001, 10423834002, 10423834003, 10423834004, 10423834005

METHOD BLANK: 2868172 | Matrix: Water
Associated Lab Samples: 10423834001, 10423834002, 10423834003, 10423834004, 10423834005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	03/21/18 23:04	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/21/18 23:04	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/21/18 23:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/21/18 23:04	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/21/18 23:04	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/21/18 23:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/21/18 23:04	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/21/18 23:04	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/21/18 23:04	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/21/18 23:04	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/21/18 23:04	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/21/18 23:04	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/21/18 23:04	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/21/18 23:04	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/21/18 23:04	
Acetone	ug/L	<8.8	20.0	8.8	03/21/18 23:04	
Acrolein	ug/L	<4.8	10.0	4.8	03/21/18 23:04	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/21/18 23:04	
Benzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
Bromoform	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
Bromomethane	ug/L	<1.5	4.0	1.5	03/21/18 23:04	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/21/18 23:04	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/21/18 23:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

METHOD BLANK: 2868172 Matrix: Water

Associated Lab Samples: 10423834001, 10423834002, 10423834003, 10423834004, 10423834005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Chloroethane	ug/L	<0.44	1.0	0.44	03/21/18 23:04	
Chloroform	ug/L	<0.46	1.0	0.46	03/21/18 23:04	
Chloromethane	ug/L	<1.1	4.0	1.1	03/21/18 23:04	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/21/18 23:04	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/21/18 23:04	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/21/18 23:04	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/21/18 23:04	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/21/18 23:04	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/21/18 23:04	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/21/18 23:04	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Naphthalene	ug/L	<0.42	1.0	0.42	03/21/18 23:04	
o-Xylene	ug/L	<0.11	0.50	0.11	03/21/18 23:04	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Styrene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/21/18 23:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/21/18 23:04	
Toluene	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/21/18 23:04	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/21/18 23:04	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/21/18 23:04	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/21/18 23:04	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/21/18 23:04	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		03/21/18 23:04	
4-Bromofluorobenzene (S)	%.	101	75-125		03/21/18 23:04	
Toluene-d8 (S)	%.	104	75-125		03/21/18 23:04	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	20.4	102	102	75-125	0	30	
1,1,1-Trichloroethane	ug/L	20	20.0	19.2	100	96	75-125	4	30	
1,1,2,2-Tetrachloroethane	ug/L	20	22.1	21.7	111	108	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	21.7	20.9	108	104	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.5	20.3	108	101	72-125	6	30	
1,1-Dichloroethane	ug/L	20	20.2	19.8	101	99	75-125	2	30	
1,1-Dichloroethene	ug/L	20	20.1	19.0	101	95	73-125	6	30	
1,1-Dichloropropene	ug/L	20	20.5	19.6	102	98	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	21.6	21.6	108	108	72-130	0	30	
1,2,3-Trichloropropane	ug/L	20	22.1	21.1	110	105	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	20	22.2	22.2	111	111	75-125	0	30	
1,2,4-Trimethylbenzene	ug/L	20	21.3	20.8	107	104	75-125	3	30	
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	53.1	106	106	64-133	0	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	21.1	109	105	75-125	3	30	
1,2-Dichlorobenzene	ug/L	20	21.2	20.9	106	104	75-125	2	30	
1,2-Dichloroethane	ug/L	20	19.7	19.6	98	98	75-125	0	30	
1,2-Dichloroethene (Total)	ug/L	40	40.0	39.4	100	98	75-125	1	30	
1,2-Dichloropropane	ug/L	20	19.1	19.2	96	96	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	20	21.3	20.6	106	103	75-125	3	30	
1,3-Dichlorobenzene	ug/L	20	21.9	21.5	109	108	75-125	2	30	
1,3-Dichloropropane	ug/L	20	20.8	19.9	104	100	75-125	5	30	
1,4-Dichlorobenzene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	427	393	107	98	75-125	8	30	
2,2,4-Trimethylpentane	ug/L	20	21.6	20.3	108	102	64-130	6	30	
2,2-Dichloropropane	ug/L	20	19.8	19.6	99	98	68-129	1	30	
2-Butanone (MEK)	ug/L	100	94.3	91.5	94	91	65-126	3	30	
2-Chlorotoluene	ug/L	20	20.5	19.8	102	99	75-125	3	30	
2-Hexanone	ug/L	100	108	105	108	105	75-134	3	30	
4-Chlorotoluene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	101	105	101	75-131	4	30	
Acetone	ug/L	100	127	109	127	109	68-150	15	30	
Acrolein	ug/L	200	205	198	103	99	63-149	3	30	
Acrylonitrile	ug/L	200	192	186	96	93	75-125	3	30	
Benzene	ug/L	20	19.7	19.4	98	97	75-125	1	30	
Bromobenzene	ug/L	20	21.9	21.6	109	108	75-125	1	30	
Bromochloromethane	ug/L	20	20.2	19.5	101	97	75-125	4	30	
Bromodichloromethane	ug/L	20	19.0	18.9	95	95	75-125	0	30	
Bromoform	ug/L	20	19.7	19.2	99	96	70-125	3	30	
Bromomethane	ug/L	20	6.3	7.9	32	40	30-145	23	30	CL
Carbon disulfide	ug/L	20	19.1	18.3	95	91	67-125	4	30	
Carbon tetrachloride	ug/L	20	19.9	19.5	100	98	75-125	2	30	
Chlorobenzene	ug/L	20	20.3	19.9	101	100	75-125	2	30	
Chloroethane	ug/L	20	19.1	19.4	95	97	73-131	2	30	
Chloroform	ug/L	20	19.2	18.7	96	93	75-125	3	30	
Chloromethane	ug/L	20	14.6	14.3	73	72	52-132	1	30	
cis-1,2-Dichloroethene	ug/L	20	19.9	19.9	99	100	75-125	0	30	
cis-1,3-Dichloropropene	ug/L	20	18.3	18.6	92	93	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	21.0	20.5	105	102	75-125	2	30	
Dibromomethane	ug/L	20	20.0	19.9	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	20	19.2	19.0	96	95	64-127	1	30	
Dichlorofluoromethane	ug/L	20	18.9	19.0	94	95	75-125	1	30	
Diisopropyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Ethyl-tert-butyl ether	ug/L	20	19.7	19.4	99	97	75-125	1	30	
Ethylbenzene	ug/L	20	21.0	20.1	105	100	75-125	4	30	
Hexachloro-1,3-butadiene	ug/L	20	21.3	21.8	107	109	75-130	2	30	
Isopropylbenzene (Cumene)	ug/L	20	20.8	20.4	104	102	75-125	2	30	
m&p-Xylene	ug/L	40	43.5	42.5	109	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Methylene Chloride	ug/L	20	19.7	19.4	99	97	72-125	2	30	
n-Butylbenzene	ug/L	20	21.2	21.1	106	105	75-125	1	30	
n-Propylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Naphthalene	ug/L	20	21.0	21.1	105	105	61-136	0	30	
o-Xylene	ug/L	20	21.4	20.8	107	104	75-125	3	30	
p-Isopropyltoluene	ug/L	20	21.3	21.0	107	105	75-125	1	30	
sec-Butylbenzene	ug/L	20	20.6	20.6	103	103	75-125	0	30	
Styrene	ug/L	20	21.7	20.9	108	104	75-125	4	30	
tert-Amylmethyl ether	ug/L	20	19.5	18.8	98	94	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	221	223	110	112	75-125	1	30	
tert-Butylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Tetrachloroethene	ug/L	20	20.7	20.0	104	100	75-125	4	30	
Tetrahydrofuran	ug/L	200	272	246	136	123	64-150	10	30	
Toluene	ug/L	20	20.0	19.6	100	98	75-125	2	30	
trans-1,2-Dichloroethene	ug/L	20	20.1	19.5	101	97	75-125	3	30	
trans-1,3-Dichloropropene	ug/L	20	20.4	20.4	102	102	75-125	0	30	
trans-1,4-Dichloro-2-butene	ug/L	50	47.2	46.6	94	93	57-126	1	30	
Trichloroethene	ug/L	20	20.1	19.5	100	97	75-125	3	30	
Trichlorofluoromethane	ug/L	20	20.1	20.5	101	102	74-126	2	30	
Vinyl acetate	ug/L	20	20.4	20.5	102	102	72-129	0	30	
Vinyl chloride	ug/L	20	18.3	18.4	91	92	71-130	1	30	
Xylene (Total)	ug/L	60	64.9	63.3	108	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.				107	104	75-125			
4-Bromofluorobenzene (S)	%.				100	99	75-125			
Toluene-d8 (S)	%.				105	105	75-125			

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	<0.15	20	21.1	106	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	22.2	111	75-125	
1,1,2-Trichloroethane	ug/L	<0.22	20	21.1	105	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	22.8	114	75-136	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	20.5	102	75-125	
1,1-Dichloroethene	ug/L	<0.18	20	21.0	105	75-127	
1,1-Dichloropropene	ug/L	<0.18	20	21.5	108	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	23.0	115	72-137	
1,2,3-Trichloropropane	ug/L	<0.66	20	21.4	107	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	23.1	116	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	22.3	111	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	55.5	111	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	21.5	107	75-125	
1,2-Dichlorobenzene	ug/L	<0.21	20	22.0	110	75-125	
1,2-Dichloroethane	ug/L	<0.15	20	19.4	97	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	<0.62	20	19.3	97	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	21.8	109	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	22.2	111	75-125	
1,3-Dichloropropane	ug/L	<0.13	20	19.9	99	75-125	
1,4-Dichlorobenzene	ug/L	<0.10	20	21.8	109	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	377	94	67-128	
2,2,4-Trimethylpentane	ug/L	<1.3	20	22.9	114	65-150	
2,2-Dichloropropane	ug/L	<0.40	20	20.8	104	65-136	
2-Butanone (MEK)	ug/L	<2.4	100	89.0	89	59-125	
2-Chlorotoluene	ug/L	<0.20	20	21.4	107	73-126	
2-Hexanone	ug/L	<2.5	100	104	104	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.5	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	102	102	73-125	
Acetone	ug/L	<8.8	100	129	129	75-150	
Acrolein	ug/L	<4.8	200	190	95	53-150	
Acrylonitrile	ug/L	<4.9	200	184	92	69-127	
Benzene	ug/L	<0.13	20	20.3	101	74-125	
Bromobenzene	ug/L	<0.16	20	22.3	111	75-125	
Bromochloromethane	ug/L	<0.38	20	20.3	101	75-125	
Bromodichloromethane	ug/L	<0.20	20	19.5	97	75-125	
Bromoform	ug/L	<1.0	20	20.1	101	68-125	
Bromomethane	ug/L	<1.5	20	9.3	47	37-149	CL
Carbon disulfide	ug/L	<0.37	20	20.0	99	66-139	
Carbon tetrachloride	ug/L	99.5	20	121	106	75-127	
Chlorobenzene	ug/L	<0.14	20	20.7	104	75-125	
Chloroethane	ug/L	<0.44	20	19.0	95	73-134	
Chloroform	ug/L	7.5	20	26.6	96	71-125	
Chloromethane	ug/L	<1.1	20	14.0	70	58-133	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20.7	104	75-125	
cis-1,3-Dichloropropene	ug/L	<0.12	20	18.6	93	71-125	
Dibromochloromethane	ug/L	<0.13	20	21.2	106	75-125	
Dibromomethane	ug/L	<0.50	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	<0.31	20	19.9	100	70-150	
Dichlorofluoromethane	ug/L	<0.38	20	19.1	95	75-126	
Diisopropyl ether	ug/L	<0.12	20	19.5	97	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	19.7	98	74-125	
Ethylbenzene	ug/L	<0.14	20	21.1	105	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	24.5	123	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	21.5	108	75-125	
m&p-Xylene	ug/L	<0.24	40	44.3	111	75-125	
Methyl-tert-butyl ether	ug/L	<0.14	20	19.4	97	75-125	
Methylene Chloride	ug/L	<1.2	20	20.0	100	72-125	
n-Butylbenzene	ug/L	<0.13	20	23.2	116	73-140	
n-Propylbenzene	ug/L	<0.12	20	22.6	113	75-126	
Naphthalene	ug/L	<0.42	20	21.5	108	61-136	
o-Xylene	ug/L	<0.11	20	21.4	107	75-125	
p-Isopropyltoluene	ug/L	<0.14	20	22.3	111	73-133	
sec-Butylbenzene	ug/L	<0.12	20	22.1	111	75-132	
Styrene	ug/L	<0.14	20	20.6	103	71-125	
tert-Amylmethyl ether	ug/L	<0.12	20	19.0	95	71-125	
tert-Butyl Alcohol	ug/L	<2.2	200	230	115	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.2	111	75-126	
Tetrachloroethene	ug/L	<0.16	20	21.9	110	75-125	
Tetrahydrofuran	ug/L	<4.3	200	291	145	75-150	
Toluene	ug/L	<0.17	20	20.2	101	74-125	
trans-1,2-Dichloroethene	ug/L	<0.21	20	21.0	105	75-125	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20.7	103	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	48.0	96	57-125	
Trichloroethene	ug/L	<0.18	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.13	20	20.8	104	75-135	
Vinyl acetate	ug/L	<1.5	20	19.8	99	57-136	
Vinyl chloride	ug/L	<0.096	20	19.2	96	74-141	
Xylene (Total)	ug/L	<0.24	60	65.8	110	75-125	
1,2-Dichloroethane-d4 (S)	%.				103	75-125	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				105	75-125	

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	CL
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	<0.20	<0.20		30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	106	105	2		
4-Bromofluorobenzene (S)	%.	101	102	0		
Toluene-d8 (S)	%.	105	102	2		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 528473

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10423834

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10423834001	**MW9U-GW-031418**	EPA 8260B	528473		
10423834002	**MW3D-GW-031418**	EPA 8260B	528473		
10423834003	**W26-GW-031418**	EPA 8260B	528473		
10423834004	**MW13S-GW-031418**	EPA 8260B	528473		
10423834005	**Trip Blank**	EPA 8260B	528473		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reque

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fiel

WO# : 10423834

10423834

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: **10 Day Standard**	Project #: 1497	Pace Profile #: **36447 / 4**	WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MW9U-GW-031418	WT	G	3/14	1000	—	—	—	3				X				X											001
2	MW3D-GW-031418	↓			1135	↓	↓	↓	3				X				X											002
3	W26-GW-031418			↓	1325				3				X				X											003
4	MW13S-GW-031418		↓	↓	1610				3				X				X											004
5	Trip Blank	↓	—	—	—	↓	↓	↓	2				X				X											005
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/15/18	1530	[signature] Pace	3/16/18	930	3.7	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/14/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2m Hill UPRR **Project #:**

WO#: 10423834
PM: JMG **Due Date: 03/30/18**
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9637 6478

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.7 **Cooler Temp Corrected (°C):** 3.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** MD 3/16/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. NO MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact? JMG 031618	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC?	☑ Yes	☐ No		12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)? JMG 031618	☒ Yes	☐ No	☐ N/A	14. 2 of 2 trip blanks have >6mm headspace
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. 2 Present 1 of 3 of sample 004 have headspace
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 150954				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Lindsey/Dave Date/Time: 03/16/18

Comments/Resolution: Notified client of head space in vials.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1015	Temp: 3.7	Corrected Temp: 3.7
Time: 1030	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: **Date:** 03/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

March 30, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424011001	**MarlowWellW20-GW-031518**	Water	03/15/18 10:15	03/17/18 09:20
10424011002	**MWID-GW-031518**	Water	03/15/18 12:05	03/17/18 09:20
10424011003	**MW2D-GW-031518**	Water	03/15/18 14:40	03/17/18 09:20
10424011004	**MW20D-GW-031518**	Water	03/15/18 16:00	03/17/18 09:20
10424011005	**MW6S-GW-031618**	Water	03/16/18 08:30	03/17/18 09:20
10424011006	**MW11S-GW-031618**	Water	03/16/18 09:15	03/17/18 09:20
10424011007	**MW10S-GW-031618**	Water	03/16/18 09:30	03/17/18 09:20
10424011008	**MW12S-GW-031618**	Water	03/16/18 10:15	03/17/18 09:20
10424011009	**MW8S-GW-031618**	Water	03/16/18 10:30	03/17/18 09:20
10424011010	**MW7S-GW-031618**	Water	03/16/18 10:45	03/17/18 09:20
10424011011	**MW1S-GW-031618**	Water	03/16/18 11:05	03/17/18 09:20
10424011012	**MW9S-GW-031618**	Water	03/16/18 11:45	03/17/18 09:20
10424011013	**Primary School Well-GW-031518**	Water	03/15/18 09:00	03/17/18 09:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424011001	**MarlowWellW20-GW-031518**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011002	**MWID-GW-031518**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011003	**MW2D-GW-031518**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011004	**MW20D-GW-031518**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011005	**MW6S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011006	**MW11S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011007	**MW10S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011008	**MW12S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011009	**MW8S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011010	**MW7S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011011	**MW1S-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011012	**MW9S-GW-031618**	RSK 175	MJL	3	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424011013	**Primary School Well-GW-031518**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011001	**MarlowWellW20-GW-031518**					
RSK 175	Methane	341	ug/L	10.0	03/20/18 12:14	
EPA 6010D	Barium, Dissolved	4.2J	ug/L	10.0	03/22/18 11:05	
EPA 6010D	Calcium, Dissolved	14500	ug/L	500	03/22/18 11:05	
EPA 6010D	Iron, Dissolved	50.8	ug/L	50.0	03/22/18 11:05	
EPA 6010D	Magnesium, Dissolved	7160	ug/L	500	03/22/18 11:05	
EPA 6010D	Manganese, Dissolved	53.2	ug/L	5.0	03/22/18 11:05	
EPA 6010D	Potassium, Dissolved	2050J	ug/L	2500	03/22/18 11:05	
EPA 6010D	Sodium, Dissolved	9610	ug/L	1000	03/22/18 11:05	
EPA 6010D	Zinc, Dissolved	2.2J	ug/L	20.0	03/22/18 11:05	
SM 2320B	Alkalinity, Total as CaCO3	91.5	mg/L	5.0	03/22/18 12:00	
SM 2540C	Total Dissolved Solids	87.0	mg/L	10.0	03/21/18 13:48	
EPA 300.0	Chloride	2.2	mg/L	1.2	03/17/18 12:54	B,FS
EPA 300.0	Sulfate	0.56J	mg/L	1.2	03/17/18 12:54	B,FS
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	03/26/18 21:25	
10424011002	**MWID-GW-031518**					
RSK 175	Methane	6.0J	ug/L	10.0	03/20/18 12:22	
EPA 6010D	Barium, Dissolved	72.6	ug/L	10.0	03/22/18 11:08	
EPA 6010D	Calcium, Dissolved	52100	ug/L	500	03/22/18 11:08	
EPA 6010D	Magnesium, Dissolved	12800	ug/L	500	03/22/18 11:08	
EPA 6010D	Manganese, Dissolved	72.2	ug/L	5.0	03/22/18 11:08	
EPA 6010D	Potassium, Dissolved	1580J	ug/L	2500	03/22/18 11:08	
EPA 6010D	Sodium, Dissolved	11200	ug/L	1000	03/22/18 11:08	
EPA 6010D	Vanadium, Dissolved	1.9J	ug/L	15.0	03/22/18 11:08	
SM 2320B	Alkalinity, Total as CaCO3	206	mg/L	5.0	03/22/18 12:04	
SM 2540C	Total Dissolved Solids	236	mg/L	10.0	03/21/18 13:48	
EPA 300.0	Chloride	1.7	mg/L	1.2	03/17/18 13:09	B
EPA 300.0	Nitrate as N	0.095J	mg/L	0.10	03/17/18 13:09	
EPA 300.0	Sulfate	3.5	mg/L	1.2	03/17/18 13:09	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.097	mg/L	0.020	03/21/18 12:55	
SM 5310C	Total Organic Carbon	0.75J	mg/L	1.0	03/26/18 21:39	
10424011003	**MW2D-GW-031518**					
RSK 175	Methane	44.9	ug/L	10.0	03/20/18 12:29	
EPA 6010D	Barium, Dissolved	104	ug/L	10.0	03/22/18 11:11	
EPA 6010D	Calcium, Dissolved	39000	ug/L	500	03/22/18 11:11	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/22/18 11:11	
EPA 6010D	Iron, Dissolved	895	ug/L	50.0	03/22/18 11:11	
EPA 6010D	Magnesium, Dissolved	11100	ug/L	500	03/22/18 11:11	
EPA 6010D	Manganese, Dissolved	630	ug/L	5.0	03/22/18 11:11	
EPA 6010D	Potassium, Dissolved	2540	ug/L	2500	03/22/18 11:11	
EPA 6010D	Sodium, Dissolved	16600	ug/L	1000	03/22/18 11:11	
EPA 6010D	Vanadium, Dissolved	3.7J	ug/L	15.0	03/22/18 11:11	
SM 2320B	Alkalinity, Total as CaCO3	184	mg/L	5.0	03/22/18 12:09	
SM 2540C	Total Dissolved Solids	211	mg/L	10.0	03/21/18 13:48	
EPA 300.0	Chloride	1.4	mg/L	1.2	03/17/18 13:48	B
EPA 300.0	Nitrate as N	0.11	mg/L	0.10	03/17/18 13:48	
EPA 300.0	Sulfate	0.97J	mg/L	1.2	03/17/18 13:48	B

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011003	**MW2D-GW-031518**					
EPA 353.2	Nitrogen, NO2 plus NO3	0.11	mg/L	0.020	03/21/18 12:56	
SM 5310C	Total Organic Carbon	0.75J	mg/L	1.0	03/26/18 21:53	
10424011004	**MW20D-GW-031518**					
EPA 6010D	Aluminum, Dissolved	1360	ug/L	200	03/22/18 11:13	
EPA 6010D	Barium, Dissolved	37.8	ug/L	10.0	03/22/18 11:13	
EPA 6010D	Calcium, Dissolved	57700	ug/L	500	03/22/18 11:13	
EPA 6010D	Chromium, Dissolved	0.76J	ug/L	10.0	03/22/18 11:13	
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	03/22/18 11:13	
EPA 6010D	Copper, Dissolved	1.8J	ug/L	10.0	03/22/18 11:13	
EPA 6010D	Iron, Dissolved	1290	ug/L	50.0	03/22/18 11:13	
EPA 6010D	Magnesium, Dissolved	22500	ug/L	500	03/22/18 11:13	
EPA 6010D	Manganese, Dissolved	16.0	ug/L	5.0	03/22/18 11:13	
EPA 6010D	Potassium, Dissolved	4110	ug/L	2500	03/22/18 11:13	
EPA 6010D	Sodium, Dissolved	20400	ug/L	1000	03/22/18 11:13	
EPA 6010D	Vanadium, Dissolved	10.5J	ug/L	15.0	03/22/18 11:13	
EPA 6010D	Zinc, Dissolved	56.1	ug/L	20.0	03/22/18 11:13	
SM 2320B	Alkalinity, Total as CaCO3	272	mg/L	5.0	03/22/18 12:13	
SM 2540C	Total Dissolved Solids	311	mg/L	10.0	03/21/18 13:48	
EPA 300.0	Chloride	5.3	mg/L	1.2	03/17/18 14:03	
EPA 300.0	Nitrate as N	1.1	mg/L	0.10	03/17/18 14:03	
EPA 300.0	Sulfate	7.3	mg/L	1.2	03/17/18 14:03	
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.020	03/21/18 12:57	
SM 5310C	Total Organic Carbon	0.82J	mg/L	1.0	03/27/18 00:43	
10424011005	**MW6S-GW-031618**					
RSK 175	Methane	1.4J	ug/L	10.0	03/21/18 13:27	
EPA 6010D	Aluminum, Dissolved	683	ug/L	200	03/22/18 11:16	
EPA 6010D	Barium, Dissolved	49.5	ug/L	10.0	03/22/18 11:16	
EPA 6010D	Calcium, Dissolved	36100	ug/L	500	03/22/18 11:16	
EPA 6010D	Copper, Dissolved	1.2J	ug/L	10.0	03/22/18 11:16	
EPA 6010D	Iron, Dissolved	823	ug/L	50.0	03/22/18 11:16	
EPA 6010D	Magnesium, Dissolved	9960	ug/L	500	03/22/18 11:16	
EPA 6010D	Manganese, Dissolved	5.7	ug/L	5.0	03/22/18 11:16	
EPA 6010D	Potassium, Dissolved	1050J	ug/L	2500	03/22/18 11:16	
EPA 6010D	Sodium, Dissolved	12400	ug/L	1000	03/22/18 11:16	
EPA 6010D	Vanadium, Dissolved	6.5J	ug/L	15.0	03/22/18 11:16	
EPA 6010D	Zinc, Dissolved	7.1J	ug/L	20.0	03/22/18 11:16	
SM 2320B	Alkalinity, Total as CaCO3	161	mg/L	5.0	03/22/18 12:18	
SM 2540C	Total Dissolved Solids	214	mg/L	10.0	03/22/18 15:41	
EPA 300.0	Chloride	1.2	mg/L	1.2	03/17/18 14:18	B,FS
EPA 300.0	Nitrate as N	0.13	mg/L	0.10	03/17/18 14:18	FS
EPA 300.0	Sulfate	1.9	mg/L	1.2	03/17/18 14:18	B,FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.14	mg/L	0.020	03/21/18 12:58	
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	03/26/18 22:08	
10424011006	**MW11S-GW-031618**					
RSK 175	Methane	1.7J	ug/L	10.0	03/21/18 10:01	
EPA 6010D	Aluminum, Dissolved	28.7J	ug/L	200	03/22/18 11:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011006	**MW11S-GW-031618**					
EPA 6010D	Barium, Dissolved	49.3	ug/L	10.0	03/22/18 11:19	
EPA 6010D	Calcium, Dissolved	48000	ug/L	500	03/22/18 11:19	
EPA 6010D	Iron, Dissolved	40.2J	ug/L	50.0	03/22/18 11:19	
EPA 6010D	Magnesium, Dissolved	13900	ug/L	500	03/22/18 11:19	
EPA 6010D	Manganese, Dissolved	49.7	ug/L	5.0	03/22/18 11:19	
EPA 6010D	Potassium, Dissolved	875J	ug/L	2500	03/22/18 11:19	
EPA 6010D	Sodium, Dissolved	19900	ug/L	1000	03/22/18 11:19	
EPA 6010D	Vanadium, Dissolved	6.2J	ug/L	15.0	03/22/18 11:19	
EPA 6010D	Zinc, Dissolved	7.8J	ug/L	20.0	03/22/18 11:19	
SM 2320B	Alkalinity, Total as CaCO3	218	mg/L	5.0	03/22/18 12:22	
SM 2540C	Total Dissolved Solids	251	mg/L	10.0	03/22/18 15:41	
EPA 300.0	Chloride	1.2J	mg/L	1.2	03/17/18 14:34	B
EPA 300.0	Nitrate as N	0.075J	mg/L	0.10	03/17/18 14:34	
EPA 300.0	Sulfate	2.7	mg/L	1.2	03/17/18 14:34	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.066	mg/L	0.020	03/21/18 12:59	
SM 5310C	Total Organic Carbon	0.40J	mg/L	1.0	03/26/18 22:22	
10424011007	**MW10S-GW-031618**					
RSK 175	Methane	5.5J	ug/L	10.0	03/21/18 10:09	
EPA 6010D	Aluminum, Dissolved	24.3J	ug/L	200	03/22/18 11:22	
EPA 6010D	Barium, Dissolved	63.8	ug/L	10.0	03/22/18 11:22	
EPA 6010D	Calcium, Dissolved	77000	ug/L	500	03/22/18 11:22	
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	03/22/18 11:22	
EPA 6010D	Iron, Dissolved	33.2J	ug/L	50.0	03/22/18 11:22	
EPA 6010D	Magnesium, Dissolved	21800	ug/L	500	03/22/18 11:22	
EPA 6010D	Manganese, Dissolved	37.0	ug/L	5.0	03/22/18 11:22	
EPA 6010D	Potassium, Dissolved	553J	ug/L	2500	03/22/18 11:22	
EPA 6010D	Sodium, Dissolved	13900	ug/L	1000	03/22/18 11:22	
EPA 6010D	Vanadium, Dissolved	3.8J	ug/L	15.0	03/22/18 11:22	
EPA 6010D	Zinc, Dissolved	3.9J	ug/L	20.0	03/22/18 11:22	
SM 2320B	Alkalinity, Total as CaCO3	314	mg/L	5.0	03/22/18 12:26	
SM 2540C	Total Dissolved Solids	316	mg/L	20.0	03/22/18 15:41	
EPA 300.0	Chloride	0.77J	mg/L	1.2	03/17/18 14:49	B
EPA 300.0	Nitrate as N	0.21	mg/L	0.10	03/17/18 14:49	
EPA 300.0	Sulfate	1.8	mg/L	1.2	03/17/18 14:49	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.25	mg/L	0.020	03/21/18 13:00	
SM 5310C	Total Organic Carbon	0.46J	mg/L	1.0	03/26/18 23:04	
10424011008	**MW12S-GW-031618**					
RSK 175	Methane	3.5J	ug/L	10.0	03/21/18 10:16	
EPA 6010D	Aluminum, Dissolved	626	ug/L	200	03/22/18 11:24	
EPA 6010D	Barium, Dissolved	199	ug/L	10.0	03/22/18 11:24	
EPA 6010D	Calcium, Dissolved	80300	ug/L	500	03/22/18 11:24	
EPA 6010D	Cobalt, Dissolved	1.1J	ug/L	10.0	03/22/18 11:24	
EPA 6010D	Copper, Dissolved	1.1J	ug/L	10.0	03/22/18 11:24	
EPA 6010D	Iron, Dissolved	198	ug/L	50.0	03/22/18 11:24	
EPA 6010D	Magnesium, Dissolved	23900	ug/L	500	03/22/18 11:24	
EPA 6010D	Manganese, Dissolved	16.6	ug/L	5.0	03/22/18 11:24	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011008	**MW12S-GW-031618**					
EPA 6010D	Nickel, Dissolved	1.4J	ug/L	20.0	03/22/18 11:24	
EPA 6010D	Potassium, Dissolved	528J	ug/L	2500	03/22/18 11:24	
EPA 6010D	Sodium, Dissolved	36400	ug/L	1000	03/22/18 11:24	
EPA 6010D	Vanadium, Dissolved	3.5J	ug/L	15.0	03/22/18 11:24	
EPA 6010D	Zinc, Dissolved	5.4J	ug/L	20.0	03/22/18 11:24	
SM 2320B	Alkalinity, Total as CaCO3	243	mg/L	5.0	03/23/18 09:47	M1
SM 2540C	Total Dissolved Solids	484	mg/L	20.0	03/22/18 15:41	
EPA 300.0	Chloride	40.2	mg/L	1.2	03/17/18 15:34	FS,M1
EPA 300.0	Nitrate as N	7.4	mg/L	0.10	03/17/18 15:34	FS,M1
EPA 300.0	Sulfate	38.0	mg/L	1.2	03/17/18 15:34	FS,M1
EPA 353.2	Nitrogen, NO2 plus NO3	8.5	mg/L	0.20	03/21/18 13:20	FS
EPA 410.4	Chemical Oxygen Demand	63.9	mg/L	50.0	03/26/18 15:56	
SM 5310C	Total Organic Carbon	2.3	mg/L	1.0	03/26/18 23:18	
10424011009	**MW8S-GW-031618**					
RSK 175	Methane	1.8J	ug/L	10.0	03/21/18 10:38	
EPA 6010D	Aluminum, Dissolved	11.6J	ug/L	200	03/22/18 11:27	
EPA 6010D	Barium, Dissolved	36.1	ug/L	10.0	03/22/18 11:27	
EPA 6010D	Calcium, Dissolved	44900	ug/L	500	03/22/18 11:27	
EPA 6010D	Copper, Dissolved	1.5J	ug/L	10.0	03/22/18 11:27	
EPA 6010D	Iron, Dissolved	16.9J	ug/L	50.0	03/22/18 11:27	
EPA 6010D	Magnesium, Dissolved	10900	ug/L	500	03/22/18 11:27	
EPA 6010D	Manganese, Dissolved	20.2	ug/L	5.0	03/22/18 11:27	
EPA 6010D	Potassium, Dissolved	423J	ug/L	2500	03/22/18 11:27	
EPA 6010D	Sodium, Dissolved	11900	ug/L	1000	03/22/18 11:27	
EPA 6010D	Vanadium, Dissolved	1.4J	ug/L	15.0	03/22/18 11:27	
EPA 6010D	Zinc, Dissolved	9.8J	ug/L	20.0	03/22/18 11:27	
SM 2320B	Alkalinity, Total as CaCO3	86.4	mg/L	5.0	03/23/18 10:00	
SM 2540C	Total Dissolved Solids	294	mg/L	10.0	03/22/18 15:41	
EPA 300.0	Chloride	2.2	mg/L	1.2	03/17/18 16:37	B
EPA 300.0	Nitrate as N	22.6	mg/L	0.50	03/17/18 23:01	
EPA 300.0	Sulfate	19.1	mg/L	1.2	03/17/18 16:37	
EPA 353.2	Nitrogen, NO2 plus NO3	9.1	mg/L	0.20	03/21/18 13:21	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	03/26/18 23:32	
10424011010	**MW7S-GW-031618**					
RSK 175	Methane	2.9J	ug/L	10.0	03/21/18 10:53	
EPA 6010D	Aluminum, Dissolved	37.8J	ug/L	200	03/22/18 11:30	
EPA 6010D	Barium, Dissolved	15.8	ug/L	10.0	03/22/18 11:30	
EPA 6010D	Calcium, Dissolved	11300	ug/L	500	03/22/18 11:30	
EPA 6010D	Copper, Dissolved	1.8J	ug/L	10.0	03/22/18 11:30	
EPA 6010D	Iron, Dissolved	81.4	ug/L	50.0	03/22/18 11:30	
EPA 6010D	Magnesium, Dissolved	2420	ug/L	500	03/22/18 11:30	
EPA 6010D	Manganese, Dissolved	4.6J	ug/L	5.0	03/22/18 11:30	
EPA 6010D	Potassium, Dissolved	1800J	ug/L	2500	03/22/18 11:30	
EPA 6010D	Sodium, Dissolved	2700	ug/L	1000	03/22/18 11:30	
EPA 6010D	Vanadium, Dissolved	1.2J	ug/L	15.0	03/22/18 11:30	
EPA 6010D	Zinc, Dissolved	17.7J	ug/L	20.0	03/22/18 11:30	

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011010	**MW7S-GW-031618**					
SM 2320B	Alkalinity, Total as CaCO3	36.7	mg/L	5.0	03/23/18 10:10	
SM 2540C	Total Dissolved Solids	91.0	mg/L	10.0	03/22/18 15:41	
EPA 300.0	Chloride	2.4	mg/L	1.2	03/17/18 16:52	B,FS
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	03/17/18 16:52	FS,M1
EPA 300.0	Sulfate	2.9	mg/L	1.2	03/17/18 16:52	B,FS
EPA 353.2	Nitrogen, NO2 plus NO3	1.3	mg/L	0.020	03/21/18 13:06	
SM 5310C	Total Organic Carbon	1.5	mg/L	1.0	03/26/18 23:47	
10424011011	**MW1S-GW-031618**					
RSK 175	Methane	2.6J	ug/L	10.0	03/21/18 11:00	
EPA 6010D	Aluminum, Dissolved	3460	ug/L	200	03/22/18 11:39	
EPA 6010D	Barium, Dissolved	296	ug/L	10.0	03/22/18 11:39	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	03/22/18 11:39	
EPA 6010D	Calcium, Dissolved	113000	ug/L	500	03/22/18 11:39	
EPA 6010D	Chromium, Dissolved	1.9J	ug/L	10.0	03/22/18 11:39	
EPA 6010D	Cobalt, Dissolved	1.7J	ug/L	10.0	03/22/18 11:39	
EPA 6010D	Copper, Dissolved	3.8J	ug/L	10.0	03/22/18 11:39	
EPA 6010D	Iron, Dissolved	3110	ug/L	50.0	03/22/18 11:39	
EPA 6010D	Lead, Dissolved	4.7J	ug/L	10.0	03/22/18 11:39	
EPA 6010D	Magnesium, Dissolved	31200	ug/L	500	03/22/18 11:39	
EPA 6010D	Manganese, Dissolved	36.7	ug/L	5.0	03/22/18 11:39	
EPA 6010D	Nickel, Dissolved	1.6J	ug/L	20.0	03/22/18 11:39	
EPA 6010D	Potassium, Dissolved	556J	ug/L	2500	03/22/18 11:39	
EPA 6010D	Sodium, Dissolved	42200	ug/L	1000	03/22/18 11:39	
EPA 6010D	Vanadium, Dissolved	24.8	ug/L	15.0	03/22/18 11:39	
EPA 6010D	Zinc, Dissolved	17.5J	ug/L	20.0	03/22/18 11:39	
EPA 7470A	Mercury, Dissolved	0.086J	ug/L	0.20	03/22/18 19:22	
SM 2320B	Alkalinity, Total as CaCO3	457	mg/L	5.0	03/23/18 10:26	
SM 2540C	Total Dissolved Solids	528	mg/L	20.0	03/22/18 15:41	
EPA 300.0	Chloride	7.3	mg/L	1.2	03/17/18 17:55	FS
EPA 300.0	Nitrate as N	0.062J	mg/L	0.10	03/17/18 17:55	FS
EPA 300.0	Sulfate	19.4	mg/L	1.2	03/17/18 17:55	FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.054	mg/L	0.020	03/21/18 13:07	
SM 5310C	Total Organic Carbon	3.6	mg/L	1.0	03/27/18 00:01	
10424011012	**MW9S-GW-031618**					
RSK 175	Methane	2.0J	ug/L	10.0	03/21/18 11:08	
EPA 6010D	Aluminum, Dissolved	11.5J	ug/L	200	03/22/18 11:42	
EPA 6010D	Barium, Dissolved	68.2	ug/L	10.0	03/22/18 11:42	
EPA 6010D	Calcium, Dissolved	67000	ug/L	500	03/22/18 11:42	
EPA 6010D	Iron, Dissolved	20.4J	ug/L	50.0	03/22/18 11:42	
EPA 6010D	Magnesium, Dissolved	14900	ug/L	500	03/22/18 11:42	
EPA 6010D	Manganese, Dissolved	9.0	ug/L	5.0	03/22/18 11:42	
EPA 6010D	Potassium, Dissolved	1530J	ug/L	2500	03/22/18 11:42	
EPA 6010D	Sodium, Dissolved	15200	ug/L	1000	03/22/18 11:42	
EPA 6010D	Vanadium, Dissolved	1.3J	ug/L	15.0	03/22/18 11:42	
EPA 6010D	Zinc, Dissolved	2.9J	ug/L	20.0	03/22/18 11:42	
SM 2320B	Alkalinity, Total as CaCO3	81.2	mg/L	5.0	03/23/18 10:30	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424011012	**MW9S-GW-031618**					
SM 2540C	Total Dissolved Solids	444	mg/L	20.0	03/22/18 15:41	
EPA 300.0	Chloride	36.5	mg/L	1.2	03/17/18 18:10	FS
EPA 300.0	Nitrate as N	13.7	mg/L	0.50	03/17/18 23:24	FS
EPA 300.0	Sulfate	68.1	mg/L	1.2	03/17/18 18:10	FS
EPA 353.2	Nitrogen, NO2 plus NO3	15.1	mg/L	0.40	03/21/18 13:23	FS
EPA 410.4	Chemical Oxygen Demand	25.0J	mg/L	50.0	03/30/18 10:08	
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	03/27/18 00:15	
10424011013	**Primary School Well-GW-031518**					
RSK 175	Methane	37.1	ug/L	10.0	03/21/18 09:32	
EPA 6010D	Aluminum, Dissolved	18.4J	ug/L	200	03/23/18 10:10	
EPA 6010D	Barium, Dissolved	62.7	ug/L	10.0	03/23/18 10:10	
EPA 6010D	Calcium, Dissolved	44700	ug/L	500	03/23/18 10:10	
EPA 6010D	Copper, Dissolved	6.6J	ug/L	10.0	03/23/18 10:10	
EPA 6010D	Magnesium, Dissolved	17800	ug/L	500	03/23/18 10:10	
EPA 6010D	Manganese, Dissolved	0.55J	ug/L	5.0	03/23/18 10:10	
EPA 6010D	Nickel, Dissolved	1.9J	ug/L	20.0	03/23/18 10:10	
EPA 6010D	Potassium, Dissolved	4320	ug/L	2500	03/23/18 10:10	
EPA 6010D	Sodium, Dissolved	15200	ug/L	1000	03/23/18 10:10	
EPA 6010D	Vanadium, Dissolved	14.9J	ug/L	15.0	03/23/18 10:10	
EPA 6010D	Zinc, Dissolved	42.5	ug/L	20.0	03/23/18 10:10	
SM 2320B	Alkalinity, Total as CaCO3	202	mg/L	5.0	03/23/18 10:33	
SM 2540C	Total Dissolved Solids	255	mg/L	10.0	03/21/18 13:48	
EPA 300.0	Chloride	6.7	mg/L	1.2	03/17/18 19:11	
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	03/17/18 19:11	
EPA 300.0	Sulfate	6.6	mg/L	1.2	03/17/18 19:11	
EPA 353.2	Nitrogen, NO2 plus NO3	1.4	mg/L	0.020	03/21/18 13:10	
SM 5310C	Total Organic Carbon	0.55J	mg/L	1.0	03/27/18 00:29	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 528126

R1: RPD value was outside control limits.
- DUP (Lab ID: 2866250)
  - Methane

QC Batch: 528320

R1: RPD value was outside control limits.
- DUP (Lab ID: 2867430)
  - Methane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528719

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424011008,10424011009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2869515)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 104898

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424011001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 452273)
  - Sulfide, Total

QC Batch: 104961

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424295001,10424295002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 452617)
  - Sulfide, Total
- MS (Lab ID: 452619)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 527852

B: Analyte was detected in the associated method blank.
- BLANK for HBN 527852 [WETA/345 (Lab ID: 2864914)
  - Chloride
  - Sulfate

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527852

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424011008,10424011010

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2864916)
  - Chloride
  - Nitrate as N
  - Sulfate
- MS (Lab ID: 2864918)
  - Nitrate as N
- MSD (Lab ID: 2864917)
  - Chloride
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 2864919)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
13 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 139317

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424511001,12106209001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 551837)
  - Total Organic Carbon
- MSD (Lab ID: 551838)
  - Total Organic Carbon

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MarlowWellW20-GW-031518 **Lab ID: 10424011001** Collected: 03/15/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/20/18 12:14	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/20/18 12:14	74-85-1	
Methane	**341**	ug/L	10.0	1.1	1		03/20/18 12:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:05	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:05	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:05	7440-38-2	
Barium, Dissolved	**4.2J**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:05	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:05	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:05	7440-43-9	
Calcium, Dissolved	**14500**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:05	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:05	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:05	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:05	7440-50-8	
Iron, Dissolved	**50.8**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:05	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:05	7439-92-1	
Magnesium, Dissolved	**7160**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:05	7439-95-4	
Manganese, Dissolved	**53.2**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:05	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:05	7440-02-0	
Potassium, Dissolved	**2050J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:05	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:05	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:05	7440-22-4	
Sodium, Dissolved	**9610**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:05	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:05	7440-28-0	
Vanadium, Dissolved	**<0.42**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:05	7440-62-2	
Zinc, Dissolved	**2.2J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:05	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:55	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**91.5**	mg/L	5.0	1.4	1		03/22/18 12:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**87.0**	mg/L	10.0	5.0	1		03/21/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/22/18 16:32	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.2	0.14	1		03/17/18 12:54	16887-00-6	B,FS
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		03/17/18 12:54	14797-55-8	FS
Sulfate	**0.56J**	mg/L	1.2	0.27	1		03/17/18 12:54	14808-79-8	B,FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MarlowWellW20-GW-031518 **Lab ID: 10424011001** Collected: 03/15/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.0075**	mg/L	0.020	0.0075	1		03/21/18 12:53		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:53		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		03/26/18 21:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MWID-GW-031518 **Lab ID: 10424011002** Collected: 03/15/18 12:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/20/18 12:22	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/20/18 12:22	74-85-1	
Methane	**6.0J**	ug/L	10.0	1.1	1		03/20/18 12:22	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:08	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:08	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:08	7440-38-2	
Barium, Dissolved	**72.6**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:08	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:08	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:08	7440-43-9	
Calcium, Dissolved	**52100**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:08	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:08	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:08	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:08	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:08	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:08	7439-92-1	
Magnesium, Dissolved	**12800**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:08	7439-95-4	
Manganese, Dissolved	**72.2**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:08	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:08	7440-02-0	
Potassium, Dissolved	**1580J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:08	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:08	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:08	7440-22-4	
Sodium, Dissolved	**11200**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:08	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:08	7440-28-0	
Vanadium, Dissolved	**1.9J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:08	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:08	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 18:57	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**206**	mg/L	5.0	1.4	1		03/22/18 12:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**236**	mg/L	10.0	5.0	1		03/21/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/22/18 16:34	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.14	1		03/17/18 13:09	16887-00-6	B
Nitrate as N	**0.095J**	mg/L	0.10	0.0079	1		03/17/18 13:09	14797-55-8	
Sulfate	**3.5**	mg/L	1.2	0.27	1		03/17/18 13:09	14808-79-8	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424011

Sample: MWID-GW-031518 **Lab ID: 10424011002** Collected: 03/15/18 12:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.097**	mg/L	0.020	0.0075	1		03/21/18 12:55		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:54		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.75J**	mg/L	1.0	0.20	1		03/26/18 21:39	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW2D-GW-031518 **Lab ID: 10424011003** Collected: 03/15/18 14:40 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/20/18 12:29	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/20/18 12:29	74-85-1	
Methane	**44.9**	ug/L	10.0	1.1	1		03/20/18 12:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:11	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:11	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:11	7440-38-2	
Barium, Dissolved	**104**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:11	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:11	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:11	7440-43-9	
Calcium, Dissolved	**39000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:11	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:11	7440-47-3	
Cobalt, Dissolved	**1.4J**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:11	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:11	7440-50-8	
Iron, Dissolved	**895**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:11	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:11	7439-92-1	
Magnesium, Dissolved	**11100**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:11	7439-95-4	
Manganese, Dissolved	**630**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:11	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:11	7440-02-0	
Potassium, Dissolved	**2540**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:11	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:11	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:11	7440-22-4	
Sodium, Dissolved	**16600**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:11	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:11	7440-28-0	
Vanadium, Dissolved	**3.7J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:11	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:11	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:00	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**184**	mg/L	5.0	1.4	1		03/22/18 12:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**211**	mg/L	10.0	5.0	1		03/21/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/22/18 16:35	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		03/17/18 13:48	16887-00-6	B
Nitrate as N	**0.11**	mg/L	0.10	0.0079	1		03/17/18 13:48	14797-55-8	
Sulfate	**0.97J**	mg/L	1.2	0.27	1		03/17/18 13:48	14808-79-8	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW2D-GW-031518 **Lab ID: 10424011003** Collected: 03/15/18 14:40 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.11**	mg/L	0.020	0.0075	1		03/21/18 12:56		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:54		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.75J**	mg/L	1.0	0.20	1		03/26/18 21:53	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW20D-GW-031518 **Lab ID: 10424011004** Collected: 03/15/18 16:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/20/18 12:36	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/20/18 12:36	74-85-1	
Methane	**<1.1**	ug/L	10.0	1.1	1		03/20/18 12:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**1360**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:13	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:13	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:13	7440-38-2	
Barium, Dissolved	**37.8**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:13	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:13	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:13	7440-43-9	
Calcium, Dissolved	**57700**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:13	7440-70-2	
Chromium, Dissolved	**0.76J**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:13	7440-47-3	
Cobalt, Dissolved	**1.2J**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:13	7440-48-4	
Copper, Dissolved	**1.8J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:13	7440-50-8	
Iron, Dissolved	**1290**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:13	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:13	7439-92-1	
Magnesium, Dissolved	**22500**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:13	7439-95-4	
Manganese, Dissolved	**16.0**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:13	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:13	7440-02-0	
Potassium, Dissolved	**4110**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:13	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:13	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:13	7440-22-4	
Sodium, Dissolved	**20400**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:13	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:13	7440-28-0	
Vanadium, Dissolved	**10.5J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:13	7440-62-2	
Zinc, Dissolved	**56.1**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:13	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:02	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**272**	mg/L	5.0	1.4	1		03/22/18 12:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**311**	mg/L	10.0	5.0	1		03/21/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/22/18 16:38	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.3**	mg/L	1.2	0.14	1		03/17/18 14:03	16887-00-6	
Nitrate as N	**1.1**	mg/L	0.10	0.0079	1		03/17/18 14:03	14797-55-8	
Sulfate	**7.3**	mg/L	1.2	0.27	1		03/17/18 14:03	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW20D-GW-031518 **Lab ID: 10424011004** Collected: 03/15/18 16:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.2**	mg/L	0.020	0.0075	1		03/21/18 12:57		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:54		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.82J**	mg/L	1.0	0.20	1		03/27/18 00:43	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW6S-GW-031618 **Lab ID: 10424011005** Collected: 03/16/18 08:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 13:27	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 13:27	74-85-1	
Methane	**1.4J**	ug/L	10.0	1.1	1		03/21/18 13:27	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**683**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:16	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:16	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:16	7440-38-2	
Barium, Dissolved	**49.5**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:16	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:16	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:16	7440-43-9	
Calcium, Dissolved	**36100**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:16	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:16	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:16	7440-48-4	
Copper, Dissolved	**1.2J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:16	7440-50-8	
Iron, Dissolved	**823**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:16	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:16	7439-92-1	
Magnesium, Dissolved	**9960**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:16	7439-95-4	
Manganese, Dissolved	**5.7**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:16	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:16	7440-02-0	
Potassium, Dissolved	**1050J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:16	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:16	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:16	7440-22-4	
Sodium, Dissolved	**12400**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:16	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:16	7440-28-0	
Vanadium, Dissolved	**6.5J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:16	7440-62-2	
Zinc, Dissolved	**7.1J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:16	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:04	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**161**	mg/L	5.0	1.4	1		03/22/18 12:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**214**	mg/L	10.0	5.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:14	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2**	mg/L	1.2	0.14	1		03/17/18 14:18	16887-00-6	B,FS
Nitrate as N	**0.13**	mg/L	0.10	0.0079	1		03/17/18 14:18	14797-55-8	FS
Sulfate	**1.9**	mg/L	1.2	0.27	1		03/17/18 14:18	14808-79-8	B,FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW6S-GW-031618 **Lab ID: 10424011005** Collected: 03/16/18 08:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.14**	mg/L	0.020	0.0075	1		03/21/18 12:58		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:54		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.2**	mg/L	1.0	0.20	1		03/26/18 22:08	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW11S-GW-031618 **Lab ID: 10424011006** Collected: 03/16/18 09:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 10:01	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 10:01	74-85-1	
Methane	**1.7J**	ug/L	10.0	1.1	1		03/21/18 10:01	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**28.7J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:19	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:19	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:19	7440-38-2	
Barium, Dissolved	**49.3**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:19	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:19	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:19	7440-43-9	
Calcium, Dissolved	**48000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:19	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:19	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:19	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:19	7440-50-8	
Iron, Dissolved	**40.2J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:19	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:19	7439-92-1	
Magnesium, Dissolved	**13900**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:19	7439-95-4	
Manganese, Dissolved	**49.7**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:19	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:19	7440-02-0	
Potassium, Dissolved	**875J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:19	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:19	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:19	7440-22-4	
Sodium, Dissolved	**19900**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:19	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:19	7440-28-0	
Vanadium, Dissolved	**6.2J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:19	7440-62-2	
Zinc, Dissolved	**7.8J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:19	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:06	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**218**	mg/L	5.0	1.4	1		03/22/18 12:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**251**	mg/L	10.0	5.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:15	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.14	1		03/17/18 14:34	16887-00-6	B
Nitrate as N	**0.075J**	mg/L	0.10	0.0079	1		03/17/18 14:34	14797-55-8	
Sulfate	**2.7**	mg/L	1.2	0.27	1		03/17/18 14:34	14808-79-8	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW11S-GW-031618 **Lab ID: 10424011006** Collected: 03/16/18 09:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.066**	mg/L	0.020	0.0075	1		03/21/18 12:59		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:56		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.40J**	mg/L	1.0	0.20	1		03/26/18 22:22	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW10S-GW-031618 **Lab ID: 10424011007** Collected: 03/16/18 09:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 10:09	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 10:09	74-85-1	
Methane	**5.5J**	ug/L	10.0	1.1	1		03/21/18 10:09	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**24.3J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:22	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:22	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:22	7440-38-2	
Barium, Dissolved	**63.8**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:22	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:22	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:22	7440-43-9	
Calcium, Dissolved	**77000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:22	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:22	7440-47-3	
Cobalt, Dissolved	**1.5J**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:22	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:22	7440-50-8	
Iron, Dissolved	**33.2J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:22	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:22	7439-92-1	
Magnesium, Dissolved	**21800**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:22	7439-95-4	
Manganese, Dissolved	**37.0**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:22	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:22	7440-02-0	
Potassium, Dissolved	**553J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:22	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:22	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:22	7440-22-4	
Sodium, Dissolved	**13900**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:22	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:22	7440-28-0	
Vanadium, Dissolved	**3.8J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:22	7440-62-2	
Zinc, Dissolved	**3.9J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:22	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:09	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**314**	mg/L	5.0	1.4	1		03/22/18 12:26		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**316**	mg/L	20.0	10.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:16	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**0.77J**	mg/L	1.2	0.14	1		03/17/18 14:49	16887-00-6	B
Nitrate as N	**0.21**	mg/L	0.10	0.0079	1		03/17/18 14:49	14797-55-8	
Sulfate	**1.8**	mg/L	1.2	0.27	1		03/17/18 14:49	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW10S-GW-031618 **Lab ID: 10424011007** Collected: 03/16/18 09:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.25**	mg/L	0.020	0.0075	1		03/21/18 13:00		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:56		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.46J**	mg/L	1.0	0.20	1		03/26/18 23:04	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW12S-GW-031618 **Lab ID: 10424011008** Collected: 03/16/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 10:16	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 10:16	74-85-1	
Methane	**3.5J**	ug/L	10.0	1.1	1		03/21/18 10:16	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**626**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:24	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:24	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:24	7440-38-2	
Barium, Dissolved	**199**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:24	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:24	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:24	7440-43-9	
Calcium, Dissolved	**80300**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:24	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:24	7440-47-3	
Cobalt, Dissolved	**1.1J**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:24	7440-48-4	
Copper, Dissolved	**1.1J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:24	7440-50-8	
Iron, Dissolved	**198**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:24	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:24	7439-92-1	
Magnesium, Dissolved	**23900**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:24	7439-95-4	
Manganese, Dissolved	**16.6**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:24	7439-96-5	
Nickel, Dissolved	**1.4J**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:24	7440-02-0	
Potassium, Dissolved	**528J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:24	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:24	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:24	7440-22-4	
Sodium, Dissolved	**36400**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:24	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:24	7440-28-0	
Vanadium, Dissolved	**3.5J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:24	7440-62-2	
Zinc, Dissolved	**5.4J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:24	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:11	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**243**	mg/L	5.0	1.4	1		03/23/18 09:47		M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**484**	mg/L	20.0	10.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.025**	mg/L	0.10	0.025	5		03/23/18 11:17	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**40.2**	mg/L	1.2	0.14	1		03/17/18 15:34	16887-00-6	FS,M1
Nitrate as N	**7.4**	mg/L	0.10	0.0079	1		03/17/18 15:34	14797-55-8	FS,M1
Sulfate	**38.0**	mg/L	1.2	0.27	1		03/17/18 15:34	14808-79-8	FS,M1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW12S-GW-031618 **Lab ID: 10424011008** Collected: 03/16/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**8.5**	mg/L	0.20	0.075	10		03/21/18 13:20		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**63.9**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:56		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.3**	mg/L	1.0	0.20	1		03/26/18 23:18	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW8S-GW-031618 **Lab ID: 10424011009** Collected: 03/16/18 10:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 10:38	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 10:38	74-85-1	
Methane	**1.8J**	ug/L	10.0	1.1	1		03/21/18 10:38	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**11.6J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:27	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:27	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:27	7440-38-2	
Barium, Dissolved	**36.1**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:27	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:27	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:27	7440-43-9	
Calcium, Dissolved	**44900**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:27	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:27	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:27	7440-48-4	
Copper, Dissolved	**1.5J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:27	7440-50-8	
Iron, Dissolved	**16.9J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:27	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:27	7439-92-1	
Magnesium, Dissolved	**10900**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:27	7439-95-4	
Manganese, Dissolved	**20.2**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:27	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:27	7440-02-0	
Potassium, Dissolved	**423J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:27	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:27	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:27	7440-22-4	
Sodium, Dissolved	**11900**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:27	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:27	7440-28-0	
Vanadium, Dissolved	**1.4J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:27	7440-62-2	
Zinc, Dissolved	**9.8J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:27	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:18	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**86.4**	mg/L	5.0	1.4	1		03/23/18 10:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**294**	mg/L	10.0	5.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:18	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.2	0.14	1		03/17/18 16:37	16887-00-6	B
Nitrate as N	**22.6**	mg/L	0.50	0.040	5		03/17/18 23:01	14797-55-8	
Sulfate	**19.1**	mg/L	1.2	0.27	1		03/17/18 16:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW8S-GW-031618 **Lab ID: 10424011009** Collected: 03/16/18 10:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**9.1**	mg/L	0.20	0.075	10		03/21/18 13:21		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:57		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		03/26/18 23:32	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW7S-GW-031618 **Lab ID: 10424011010** Collected: 03/16/18 10:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 10:53	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 10:53	74-85-1	
Methane	**2.9J**	ug/L	10.0	1.1	1		03/21/18 10:53	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**37.8J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:30	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:30	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:30	7440-38-2	
Barium, Dissolved	**15.8**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:30	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:30	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:30	7440-43-9	
Calcium, Dissolved	**11300**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:30	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:30	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:30	7440-48-4	
Copper, Dissolved	**1.8J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:30	7440-50-8	
Iron, Dissolved	**81.4**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:30	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:30	7439-92-1	
Magnesium, Dissolved	**2420**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:30	7439-95-4	
Manganese, Dissolved	**4.6J**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:30	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:30	7440-02-0	
Potassium, Dissolved	**1800J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:30	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:30	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:30	7440-22-4	
Sodium, Dissolved	**2700**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:30	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:30	7440-28-0	
Vanadium, Dissolved	**1.2J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:30	7440-62-2	
Zinc, Dissolved	**17.7J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:30	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:20	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**36.7**	mg/L	5.0	1.4	1		03/23/18 10:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**91.0**	mg/L	10.0	5.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:19	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.14	1		03/17/18 16:52	16887-00-6	B,FS
Nitrate as N	**1.2**	mg/L	0.10	0.0079	1		03/17/18 16:52	14797-55-8	FS,M1
Sulfate	**2.9**	mg/L	1.2	0.27	1		03/17/18 16:52	14808-79-8	B,FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW7S-GW-031618 **Lab ID: 10424011010** Collected: 03/16/18 10:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.3**	mg/L	0.020	0.0075	1		03/21/18 13:06		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:57		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.5**	mg/L	1.0	0.20	1		03/26/18 23:47	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW1S-GW-031618 **Lab ID: 10424011011** Collected: 03/16/18 11:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 11:00	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 11:00	74-85-1	
Methane	**2.6J**	ug/L	10.0	1.1	1		03/21/18 11:00	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**3460**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:39	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:39	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:39	7440-38-2	
Barium, Dissolved	**296**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:39	7440-39-3	
Beryllium, Dissolved	**0.13J**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:39	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:39	7440-43-9	
Calcium, Dissolved	**113000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:39	7440-70-2	
Chromium, Dissolved	**1.9J**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:39	7440-47-3	
Cobalt, Dissolved	**1.7J**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:39	7440-48-4	
Copper, Dissolved	**3.8J**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:39	7440-50-8	
Iron, Dissolved	**3110**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:39	7439-89-6	
Lead, Dissolved	**4.7J**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:39	7439-92-1	
Magnesium, Dissolved	**31200**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:39	7439-95-4	
Manganese, Dissolved	**36.7**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:39	7439-96-5	
Nickel, Dissolved	**1.6J**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:39	7440-02-0	
Potassium, Dissolved	**556J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:39	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:39	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:39	7440-22-4	
Sodium, Dissolved	**42200**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:39	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:39	7440-28-0	
Vanadium, Dissolved	**24.8**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:39	7440-62-2	
Zinc, Dissolved	**17.5J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:39	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.086J**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:22	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**457**	mg/L	5.0	1.4	1		03/23/18 10:26		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**528**	mg/L	20.0	10.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:20	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.3**	mg/L	1.2	0.14	1		03/17/18 17:55	16887-00-6	FS
Nitrate as N	**0.062J**	mg/L	0.10	0.0079	1		03/17/18 17:55	14797-55-8	FS
Sulfate	**19.4**	mg/L	1.2	0.27	1		03/17/18 17:55	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW1S-GW-031618 **Lab ID: 10424011011** Collected: 03/16/18 11:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.054**	mg/L	0.020	0.0075	1		03/21/18 13:07		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/26/18 13:26	03/26/18 15:57		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.6**	mg/L	1.0	0.20	1		03/27/18 00:01	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW9S-GW-031618 **Lab ID: 10424011012** Collected: 03/16/18 11:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 11:08	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 11:08	74-85-1	
Methane	**2.0J**	ug/L	10.0	1.1	1		03/21/18 11:08	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**11.5J**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:42	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:42	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:42	7440-38-2	
Barium, Dissolved	**68.2**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:42	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:42	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:42	7440-43-9	
Calcium, Dissolved	**67000**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:42	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:42	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:42	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:42	7440-50-8	
Iron, Dissolved	**20.4J**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:42	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:42	7439-92-1	
Magnesium, Dissolved	**14900**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:42	7439-95-4	
Manganese, Dissolved	**9.0**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:42	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:42	7440-02-0	
Potassium, Dissolved	**1530J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:42	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:42	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:42	7440-22-4	
Sodium, Dissolved	**15200**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:42	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:42	7440-28-0	
Vanadium, Dissolved	**1.3J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:42	7440-62-2	
Zinc, Dissolved	**2.9J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:42	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:25	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**81.2**	mg/L	5.0	1.4	1		03/23/18 10:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**444**	mg/L	20.0	10.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.025**	mg/L	0.10	0.025	5		03/23/18 11:21	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**36.5**	mg/L	1.2	0.14	1		03/17/18 18:10	16887-00-6	FS
Nitrate as N	**13.7**	mg/L	0.50	0.040	5		03/17/18 23:24	14797-55-8	FS
Sulfate	**68.1**	mg/L	1.2	0.27	1		03/17/18 18:10	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: MW9S-GW-031618 **Lab ID: 10424011012** Collected: 03/16/18 11:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**15.1**	mg/L	0.40	0.15	20		03/21/18 13:23		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**25.0J**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:08		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.2**	mg/L	1.0	0.20	1		03/27/18 00:15	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Sample: Primary School Well-GW-031518 **Lab ID: 10424011013** Collected: 03/15/18 09:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 09:32	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 09:32	74-85-1	
Methane	**37.1**	ug/L	10.0	1.1	1		03/21/18 09:32	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**18.4J**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:10	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:10	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:10	7440-38-2	
Barium, Dissolved	**62.7**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:10	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:10	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:10	7440-43-9	
Calcium, Dissolved	**44700**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:10	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:10	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:10	7440-48-4	
Copper, Dissolved	**6.6J**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:10	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:10	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:10	7439-92-1	
Magnesium, Dissolved	**17800**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:10	7439-95-4	
Manganese, Dissolved	**0.55J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:10	7439-96-5	
Nickel, Dissolved	**1.9J**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:10	7440-02-0	
Potassium, Dissolved	**4320**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:10	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:10	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:10	7440-22-4	
Sodium, Dissolved	**15200**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:10	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:10	7440-28-0	
Vanadium, Dissolved	**14.9J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:10	7440-62-2	
Zinc, Dissolved	**42.5**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:10	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:26	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**202**	mg/L	5.0	1.4	1		03/23/18 10:33		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**255**	mg/L	10.0	5.0	1		03/21/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/22/18 16:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**6.7**	mg/L	1.2	0.14	1		03/17/18 19:11	16887-00-6	
Nitrate as N	**1.2**	mg/L	0.10	0.0079	1		03/17/18 19:11	14797-55-8	
Sulfate	**6.6**	mg/L	1.2	0.27	1		03/17/18 19:11	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424011

Sample: Primary School Well-GW-031518 **Lab ID: 10424011013** Collected: 03/15/18 09:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.4**	mg/L	0.020	0.0075	1		03/21/18 13:10		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:09		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.55J**	mg/L	1.0	0.20	1		03/27/18 00:29	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528126 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004

METHOD BLANK: 2866246 Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/20/18 09:39	
Ethene	ug/L	<0.68	10.0	0.68	03/20/18 09:39	
Methane	ug/L	2.4J	10.0	1.1	03/20/18 09:39	

LABORATORY CONTROL SAMPLE & LCSD: 2866247 2866248

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	2	20	
Ethene	ug/L	106	103	101	97	95	85-115	3	20	
Methane	ug/L	60.7	58.7	57.9	97	95	85-115	1	20	

SAMPLE DUPLICATE: 2866250

Parameter	Units	10424007015 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	160	744	129	20	R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528320 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

METHOD BLANK: 2867427 Matrix: Water
Associated Lab Samples: 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/21/18 08:58	
Ethene	ug/L	<0.68	10.0	0.68	03/21/18 08:58	
Methane	ug/L	2.8J	10.0	1.1	03/21/18 08:58	

LABORATORY CONTROL SAMPLE & LCSD: 2867428 2867429

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	108	104	95	91	85-115	4	20	
Ethene	ug/L	106	100	96.8	95	91	85-115	4	20	
Methane	ug/L	60.7	57.9	55.4	95	91	85-115	4	20	

SAMPLE DUPLICATE: 2867430

Parameter	Units	10424007019 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	27.2	39.2	36	20	R1

SAMPLE DUPLICATE: 2867431

Parameter	Units	10424011009 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	1.8J	2.3J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528422 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10424011005

METHOD BLANK: 2867881 Matrix: Water
Associated Lab Samples: 10424011005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/21/18 13:20	
Ethene	ug/L	<0.68	10.0	0.68	03/21/18 13:20	
Methane	ug/L	3.0J	10.0	1.1	03/21/18 13:20	

LABORATORY CONTROL SAMPLE & LCSD: 2867882 2867883

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	104	107	91	94	85-115	3	20	
Ethene	ug/L	106	96.8	99.9	91	94	85-115	3	20	
Methane	ug/L	60.7	55.4	58.6	91	97	85-115	6	20	

SAMPLE DUPLICATE: 2867884

Parameter	Units	10424174005 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	ND	<1.1		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 527904 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

METHOD BLANK: 2865135 Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/22/18 18:25	

LABORATORY CONTROL SAMPLE: 2865136

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865137 2865138

Parameter	Units	10423831002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.4	5.5	108	109	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528502 — Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A — Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10424011013

METHOD BLANK: 2868467 — Matrix: Water
Associated Lab Samples: 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/27/18 14:22	

LABORATORY CONTROL SAMPLE: 2868468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868469 2868470

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.4	5.2	108	103	80-120	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868471 2868472

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.1	5.3	103	105	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 527900 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

METHOD BLANK: 2865119 Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/22/18 10:30	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/22/18 10:30	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/22/18 10:30	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/22/18 10:30	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/22/18 10:30	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/22/18 10:30	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/22/18 10:30	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/22/18 10:30	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/22/18 10:30	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/22/18 10:30	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/22/18 10:30	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/22/18 10:30	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/22/18 10:30	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/22/18 10:30	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/22/18 10:30	
Potassium, Dissolved	ug/L	<126	2500	126	03/22/18 10:30	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/22/18 10:30	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/22/18 10:30	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/22/18 10:30	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/22/18 10:30	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/22/18 10:30	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/22/18 10:30	

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21300	107	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	995	99	80-120	
Iron, Dissolved	ug/L	20000	20400	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	20200	101	80-120	
Manganese, Dissolved	ug/L	1000	1030	103	80-120	
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20100	100	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	494	99	80-120	
Sodium, Dissolved	ug/L	20000	20000	100	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	986	99	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865121 2865122

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21300	21500	107	108	75-125	1	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1040	1040	103	103	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	102	104	75-125	1	20	
Barium, Dissolved	ug/L	27.3	1000	1000	1050	1050	102	103	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	1	20	
Calcium, Dissolved	ug/L	53100	20000	20000	72100	71600	95	93	75-125	1	20	
Chromium, Dissolved	ug/L	1.5J	1000	1000	1000	1010	100	101	75-125	1	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	996	1000	100	100	75-125	1	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	996	1010	100	101	75-125	1	20	
Iron, Dissolved	ug/L	22.8J	20000	20000	20200	20400	101	102	75-125	1	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1020	101	102	75-125	1	20	
Magnesium, Dissolved	ug/L	14100	20000	20000	34200	34300	100	101	75-125	0	20	
Manganese, Dissolved	ug/L	6.6	1000	1000	1020	1030	102	102	75-125	1	20	
Nickel, Dissolved	ug/L	16.3J	1000	1000	1010	1020	99	100	75-125	1	20	
Potassium, Dissolved	ug/L	2610	20000	20000	23500	23600	104	105	75-125	0	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1060	1060	106	106	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	494	498	99	100	75-125	1	20	
Sodium, Dissolved	ug/L	29300	20000	20000	48700	48700	97	97	75-125	0	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	990	998	99	99	75-125	1	20	
Vanadium, Dissolved	ug/L	5.8J	1000	1000	989	997	98	99	75-125	1	20	
Zinc, Dissolved	ug/L	4.1J	1000	1000	1000	1010	100	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528499 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10424011013

METHOD BLANK: 2868451 Matrix: Water
Associated Lab Samples: 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/23/18 10:04	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/23/18 10:04	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/23/18 10:04	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/23/18 10:04	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/23/18 10:04	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/23/18 10:04	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/23/18 10:04	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/23/18 10:04	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/23/18 10:04	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/23/18 10:04	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/23/18 10:04	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/23/18 10:04	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/23/18 10:04	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/23/18 10:04	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/23/18 10:04	
Potassium, Dissolved	ug/L	<126	2500	126	03/23/18 10:04	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/23/18 10:04	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/23/18 10:04	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/23/18 10:04	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/23/18 10:04	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/23/18 10:04	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/23/18 10:04	

LABORATORY CONTROL SAMPLE: 2868452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21100	106	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1010	101	80-120	
Calcium, Dissolved	ug/L	20000	19100	96	80-120	
Chromium, Dissolved	ug/L	1000	997	100	80-120	
Cobalt, Dissolved	ug/L	1000	998	100	80-120	
Copper, Dissolved	ug/L	1000	982	98	80-120	
Iron, Dissolved	ug/L	20000	20000	100	80-120	
Lead, Dissolved	ug/L	1000	1010	101	80-120	
Magnesium, Dissolved	ug/L	20000	19800	99	80-120	
Manganese, Dissolved	ug/L	1000	1020	102	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

LABORATORY CONTROL SAMPLE: 2868452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	19900	99	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	487	97	80-120	
Sodium, Dissolved	ug/L	20000	19700	98	80-120	
Thallium, Dissolved	ug/L	1000	1010	101	80-120	
Vanadium, Dissolved	ug/L	1000	963	96	80-120	
Zinc, Dissolved	ug/L	1000	998	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868453 2868454

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21400	21700	107	108	75-125	1	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1030	1030	103	103	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1020	1040	102	103	75-125	1	20	
Barium, Dissolved	ug/L	55.0	1000	1000	1080	1090	103	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1050	104	105	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1040	102	104	75-125	1	20	
Calcium, Dissolved	ug/L	24800	20000	20000	44500	44900	98	100	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	1000	1020	100	102	75-125	1	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	995	1010	99	101	75-125	1	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	998	1010	100	101	75-125	1	20	
Iron, Dissolved	ug/L	1980	20000	20000	22100	22300	100	102	75-125	1	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1020	101	102	75-125	1	20	
Magnesium, Dissolved	ug/L	12600	20000	20000	33000	33300	102	104	75-125	1	20	
Manganese, Dissolved	ug/L	33.0	1000	1000	1050	1060	102	103	75-125	1	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	999	1010	100	101	75-125	1	20	
Potassium, Dissolved	ug/L	4060	20000	20000	24800	25000	103	105	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1070	1070	107	107	75-125	0	20	
Silver, Dissolved	ug/L	<0.27	500	500	493	499	99	100	75-125	1	20	
Sodium, Dissolved	ug/L	14900	20000	20000	34900	35200	100	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	1010	1020	101	102	75-125	1	20	
Vanadium, Dissolved	ug/L	<0.42	1000	1000	975	988	97	99	75-125	1	20	
Zinc, Dissolved	ug/L	30.8	1000	1000	1020	1040	99	100	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868455 2868456

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	20900	21300	104	106	75-125	2	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	998	1020	100	102	75-125	3	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1000	1020	100	102	75-125	2	20	
Barium, Dissolved	ug/L	31.3	1000	1000	1030	1050	100	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868455 2868456

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1020	1030	102	103	75-125	2	20	
Cadmium, Dissolved	ug/L	0.54J	1000	1000	1000	1020	100	102	75-125	2	20	
Calcium, Dissolved	ug/L	34400	20000	20000	53700	54100	96	98	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	980	996	98	100	75-125	2	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	969	987	97	99	75-125	2	20	
Copper, Dissolved	ug/L	61.7	1000	1000	1030	1050	97	99	75-125	2	20	
Iron, Dissolved	ug/L	18.0J	20000	20000	19600	20000	98	100	75-125	2	20	
Lead, Dissolved	ug/L	9.1J	1000	1000	996	1020	99	101	75-125	2	20	
Magnesium, Dissolved	ug/L	11500	20000	20000	31300	31600	99	101	75-125	1	20	
Manganese, Dissolved	ug/L	9.1	1000	1000	1000	1020	99	101	75-125	2	20	
Nickel, Dissolved	ug/L	9.6J	1000	1000	985	1000	98	99	75-125	2	20	
Potassium, Dissolved	ug/L	1380J	20000	20000	21500	21800	100	102	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1030	1050	103	105	75-125	2	20	
Silver, Dissolved	ug/L	<0.27	500	500	482	490	96	98	75-125	2	20	
Sodium, Dissolved	ug/L	12500	20000	20000	32000	32300	98	99	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	984	1000	98	100	75-125	2	20	
Vanadium, Dissolved	ug/L	6.8J	1000	1000	957	973	95	97	75-125	2	20	
Zinc, Dissolved	ug/L	5320	1000	1000	6160	6210	84	89	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528547 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007

METHOD BLANK: 2868578 | Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1.5J	5.0	1.4	03/22/18 10:10	

LABORATORY CONTROL SAMPLE & LCSD: 2868579 | 2868580

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.6	42.7	106	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868581 | 2868582

Parameter	Units	10423965005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	505	40	40	552	546	115	101	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868583 | 2868584

Parameter	Units	10424009002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	512000 ug/L	40	40	557	557	113	112	80-120	0	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528719 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

METHOD BLANK: 2869512 | Matrix: Water
Associated Lab Samples: 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/23/18 09:35	

LABORATORY CONTROL SAMPLE & LCSD: 2869513 | 2869514

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.4	42.4	98	106	90-110	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869515 | 2869516

Parameter	Units	10424011008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	243	40	40	296	286	134	110	80-120	3	30	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869517 | 2869518

Parameter	Units	10424011009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	86.4	40	40	126	126	98	99	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528351 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011013

METHOD BLANK: 2867527 | Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/21/18 13:48	

LABORATORY CONTROL SAMPLE & LCSD: 2867528 | 2867529

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	984	980	98	98	80-120	0	10	

SAMPLE DUPLICATE: 2867530

Parameter	Units	10423847001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5400	5400	0	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528598
Analysis Method: SM 2540C
QC Batch Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

METHOD BLANK: 2868765
Matrix: Water
Associated Lab Samples: 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/22/18 15:41	

LABORATORY CONTROL SAMPLE & LCSD: 2868766 2868767

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	988	978	99	98	80-120	1	10	

SAMPLE DUPLICATE: 2868768

Parameter	Units	10424009002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2280	2210	3	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 104898 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011013

METHOD BLANK: 452270 | Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/22/18 16:31	

LABORATORY CONTROL SAMPLE: 452271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	99	90-110	

MATRIX SPIKE SAMPLE: 452273

Parameter	Units	10424011001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.11	57	75-125	M1

SAMPLE DUPLICATE: 452272

Parameter	Units	10424011001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 104961 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

METHOD BLANK: 452614 Matrix: Water
Associated Lab Samples: 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/23/18 11:12	

LABORATORY CONTROL SAMPLE: 452615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 452617

Parameter	Units	10424295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.0070J	.2	0.13	62	75-125	M1

MATRIX SPIKE SAMPLE: 452619

Parameter	Units	10424295002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.063	31	75-125	M1

SAMPLE DUPLICATE: 452616

Parameter	Units	10424295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.0070J	0.0074J		20	

SAMPLE DUPLICATE: 452618

Parameter	Units	10424295002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 527852 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

METHOD BLANK: 2864914 — Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.29J	1.2	0.14	03/17/18 12:39	FS
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/17/18 12:39	FS
Sulfate	mg/L	0.49J	1.2	0.27	03/17/18 12:39	FS

LABORATORY CONTROL SAMPLE: 2864915

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.3	98	90-110	FS
Nitrate as N	mg/L	1	0.96	96	90-110	FS
Sulfate	mg/L	12.5	12.3	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2864916 — 2864917

Parameter	Units	10424011008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	40.2	12.5	12.5	48.3	48.3	65	65	90-110	0	20	FS,M1
Nitrate as N	mg/L	7.4	1	1	7.6	7.6	23	24	90-110	0	20	FS,M1
Sulfate	mg/L	38.0	12.5	12.5	46.8	46.9	71	71	90-110	0	20	FS,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2864918 — 2864919

Parameter	Units	10424011010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.4	12.5	12.5	14.3	14.3	96	95	90-110	0	20	FS
Nitrate as N	mg/L	1.2	1	1	2.1	2.1	89	89	90-110	0	20	FS,M1
Sulfate	mg/L	2.9	12.5	12.5	15.0	15.0	97	97	90-110	0	20	FS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 528131 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

METHOD BLANK: 2866254 Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/21/18 13:11	FS

LABORATORY CONTROL SAMPLE: 2866255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866256 2866257

Parameter	Units	10424020001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.95	1	1	1.9	1.9	96	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866258 2866259

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.9	10	10	15.3	15.2	94	93	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 529034 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011

METHOD BLANK: 2871214 Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/26/18 15:47	

LABORATORY CONTROL SAMPLE: 2871215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	301	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871216 2871217

Parameter	Units	10423642004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	16.4J	250	250	283	270	107	102	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2871218 2871219

Parameter	Units	10423642005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	52.2	250	250	308	308	102	103	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 529617 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10424011012, 10424011013

METHOD BLANK: 2874644 | Matrix: Water
Associated Lab Samples: 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/30/18 10:05	

LABORATORY CONTROL SAMPLE: 2874645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874646 2874647

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	254	255	100	101	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874648 2874649

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	253	260	99	102	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

QC Batch: 139317 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

METHOD BLANK: 551835 | Matrix: Water
Associated Lab Samples: 10424011001, 10424011002, 10424011003, 10424011004, 10424011005, 10424011006, 10424011007, 10424011008, 10424011009, 10424011010, 10424011011, 10424011012, 10424011013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/26/18 20:15	

LABORATORY CONTROL SAMPLE: 551836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 551837 551838

Parameter	Units	10424511001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	125	125	98.2	99.4	78	79	80-120	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 551839 551840

Parameter	Units	12106209001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	18.7	25	25	43.0	42.7	97	96	80-120	1	20	

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424011

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424011001	**MarlowWellW20-GW-031518**	RSK 175	528126		
10424011002	**MWID-GW-031518**	RSK 175	528126		
10424011003	**MW2D-GW-031518**	RSK 175	528126		
10424011004	**MW20D-GW-031518**	RSK 175	528126		
10424011005	**MW6S-GW-031618**	RSK 175	528422		
10424011006	**MW11S-GW-031618**	RSK 175	528320		
10424011007	**MW10S-GW-031618**	RSK 175	528320		
10424011008	**MW12S-GW-031618**	RSK 175	528320		
10424011009	**MW8S-GW-031618**	RSK 175	528320		
10424011010	**MW7S-GW-031618**	RSK 175	528320		
10424011011	**MW1S-GW-031618**	RSK 175	528320		
10424011012	**MW9S-GW-031618**	RSK 175	528320		
10424011013	**Primary School Well-GW-031518**	RSK 175	528320		
10424011001	**MarlowWellW20-GW-031518**	EPA 3010	527900	EPA 6010D	528178
10424011002	**MWID-GW-031518**	EPA 3010	527900	EPA 6010D	528178
10424011003	**MW2D-GW-031518**	EPA 3010	527900	EPA 6010D	528178
10424011004	**MW20D-GW-031518**	EPA 3010	527900	EPA 6010D	528178
10424011005	**MW6S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011006	**MW11S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011007	**MW10S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011008	**MW12S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011009	**MW8S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011010	**MW7S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011011	**MW1S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011012	**MW9S-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424011013	**Primary School Well-GW-031518**	EPA 3010	528499	EPA 6010D	528604
10424011001	**MarlowWellW20-GW-031518**	EPA 7470A	527904	EPA 7470A	528184
10424011002	**MWID-GW-031518**	EPA 7470A	527904	EPA 7470A	528184
10424011003	**MW2D-GW-031518**	EPA 7470A	527904	EPA 7470A	528184
10424011004	**MW20D-GW-031518**	EPA 7470A	527904	EPA 7470A	528184
10424011005	**MW6S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011006	**MW11S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011007	**MW10S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011008	**MW12S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011009	**MW8S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011010	**MW7S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011011	**MW1S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011012	**MW9S-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424011013	**Primary School Well-GW-031518**	EPA 7470A	528502	EPA 7470A	528610
10424011001	**MarlowWellW20-GW-031518**	SM 2320B	528547		
10424011002	**MWID-GW-031518**	SM 2320B	528547		
10424011003	**MW2D-GW-031518**	SM 2320B	528547		
10424011004	**MW20D-GW-031518**	SM 2320B	528547		
10424011005	**MW6S-GW-031618**	SM 2320B	528547		
10424011006	**MW11S-GW-031618**	SM 2320B	528547		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424011007	**MW10S-GW-031618**	SM 2320B	528547		
10424011008	**MW12S-GW-031618**	SM 2320B	528719		
10424011009	**MW8S-GW-031618**	SM 2320B	528719		
10424011010	**MW7S-GW-031618**	SM 2320B	528719		
10424011011	**MW1S-GW-031618**	SM 2320B	528719		
10424011012	**MW9S-GW-031618**	SM 2320B	528719		
10424011013	**Primary School Well-GW-031518**	SM 2320B	528719		
10424011001	**MarlowWellW20-GW-031518**	SM 2540C	528351		
10424011002	**MWID-GW-031518**	SM 2540C	528351		
10424011003	**MW2D-GW-031518**	SM 2540C	528351		
10424011004	**MW20D-GW-031518**	SM 2540C	528351		
10424011005	**MW6S-GW-031618**	SM 2540C	528598		
10424011006	**MW11S-GW-031618**	SM 2540C	528598		
10424011007	**MW10S-GW-031618**	SM 2540C	528598		
10424011008	**MW12S-GW-031618**	SM 2540C	528598		
10424011009	**MW8S-GW-031618**	SM 2540C	528598		
10424011010	**MW7S-GW-031618**	SM 2540C	528598		
10424011011	**MW1S-GW-031618**	SM 2540C	528598		
10424011012	**MW9S-GW-031618**	SM 2540C	528598		
10424011013	**Primary School Well-GW-031518**	SM 2540C	528351		
10424011001	**MarlowWellW20-GW-031518**	SM 4500-S-2 D	104898		
10424011002	**MWID-GW-031518**	SM 4500-S-2 D	104898		
10424011003	**MW2D-GW-031518**	SM 4500-S-2 D	104898		
10424011004	**MW20D-GW-031518**	SM 4500-S-2 D	104898		
10424011005	**MW6S-GW-031618**	SM 4500-S-2 D	104961		
10424011006	**MW11S-GW-031618**	SM 4500-S-2 D	104961		
10424011007	**MW10S-GW-031618**	SM 4500-S-2 D	104961		
10424011008	**MW12S-GW-031618**	SM 4500-S-2 D	104961		
10424011009	**MW8S-GW-031618**	SM 4500-S-2 D	104961		
10424011010	**MW7S-GW-031618**	SM 4500-S-2 D	104961		
10424011011	**MW1S-GW-031618**	SM 4500-S-2 D	104961		
10424011012	**MW9S-GW-031618**	SM 4500-S-2 D	104961		
10424011013	**Primary School Well-GW-031518**	SM 4500-S-2 D	104898		
10424011001	**MarlowWellW20-GW-031518**	EPA 300.0	527852		
10424011002	**MWID-GW-031518**	EPA 300.0	527852		
10424011003	**MW2D-GW-031518**	EPA 300.0	527852		
10424011004	**MW20D-GW-031518**	EPA 300.0	527852		
10424011005	**MW6S-GW-031618**	EPA 300.0	527852		
10424011006	**MW11S-GW-031618**	EPA 300.0	527852		
10424011007	**MW10S-GW-031618**	EPA 300.0	527852		
10424011008	**MW12S-GW-031618**	EPA 300.0	527852		
10424011009	**MW8S-GW-031618**	EPA 300.0	527852		
10424011010	**MW7S-GW-031618**	EPA 300.0	527852		
10424011011	**MW1S-GW-031618**	EPA 300.0	527852		
10424011012	**MW9S-GW-031618**	EPA 300.0	527852		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424011013	**Primary School Well-GW-031518**	EPA 300.0	527852		
10424011001	**MarlowWellW20-GW-031518**	EPA 353.2	528131		
10424011002	**MWID-GW-031518**	EPA 353.2	528131		
10424011003	**MW2D-GW-031518**	EPA 353.2	528131		
10424011004	**MW20D-GW-031518**	EPA 353.2	528131		
10424011005	**MW6S-GW-031618**	EPA 353.2	528131		
10424011006	**MW11S-GW-031618**	EPA 353.2	528131		
10424011007	**MW10S-GW-031618**	EPA 353.2	528131		
10424011008	**MW12S-GW-031618**	EPA 353.2	528131		
10424011009	**MW8S-GW-031618**	EPA 353.2	528131		
10424011010	**MW7S-GW-031618**	EPA 353.2	528131		
10424011011	**MW1S-GW-031618**	EPA 353.2	528131		
10424011012	**MW9S-GW-031618**	EPA 353.2	528131		
10424011013	**Primary School Well-GW-031518**	EPA 353.2	528131		
10424011001	**MarlowWellW20-GW-031518**	EPA 410.4	529034	EPA 410.4	529119
10424011002	**MWID-GW-031518**	EPA 410.4	529034	EPA 410.4	529119
10424011003	**MW2D-GW-031518**	EPA 410.4	529034	EPA 410.4	529119
10424011004	**MW20D-GW-031518**	EPA 410.4	529034	EPA 410.4	529119
10424011005	**MW6S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011006	**MW11S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011007	**MW10S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011008	**MW12S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011009	**MW8S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011010	**MW7S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011011	**MW1S-GW-031618**	EPA 410.4	529034	EPA 410.4	529119
10424011012	**MW9S-GW-031618**	EPA 410.4	529617	EPA 410.4	529850
10424011013	**Primary School Well-GW-031518**	EPA 410.4	529617	EPA 410.4	529850
10424011001	**MarlowWellW20-GW-031518**	SM 5310C	139317		
10424011002	**MWID-GW-031518**	SM 5310C	139317		
10424011003	**MW2D-GW-031518**	SM 5310C	139317		
10424011004	**MW20D-GW-031518**	SM 5310C	139317		
10424011005	**MW6S-GW-031618**	SM 5310C	139317		
10424011006	**MW11S-GW-031618**	SM 5310C	139317		
10424011007	**MW10S-GW-031618**	SM 5310C	139317		
10424011008	**MW12S-GW-031618**	SM 5310C	139317		
10424011009	**MW8S-GW-031618**	SM 5310C	139317		
10424011010	**MW7S-GW-031618**	SM 5310C	139317		
10424011011	**MW1S-GW-031618**	SM 5310C	139317		
10424011012	**MW9S-GW-031618**	SM 5310C	139317		
10424011013	**Primary School Well-GW-031518**	SM 5310C	139317		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D[ocument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus[t]

WO#: 10424011

10424011

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location: WA / Freeman

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals = Y

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	Residual Chlorine (Y/N)	
1	Marlow Well WZO-GW-031518	WT	G	3/15	1015	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X			48 hr hold
2	MW1D-GW-031518	↓	↓	↓	1205	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓
3	MW2D-GW-031518				1440				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
4	MW2OD-GW-031518				1600				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
5	MW6S-GW-031618			3/16	830				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
6	MW11S-GW-031618				915				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
7	MW10S-GW-031618				930				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
8	MW12S-GW-031618				1015				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
9	MW8S-GW-031618				1030				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
10	MW10S-GW-031618				1045				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
11	MW1S-GW-031618				1105				9	X	X	X		X				X	X	X	X	X	X	X	X	X			
12	MW9S-GW-031618	↓	↓	↓	1145	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓

MW7S per client JMG 032018

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	3/16/18	1530	[signature]	3-17-18	920	0.5	Y	Y	Y
*Field filtered by client							0.8			
							2.0			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/15/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424011
PM: JMG Due Date: 04/02/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7448-1032-7999, -8002, -8013

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:

Temp Blank? ☒Yes ☐No

Thermometer Used: ☒151401163 ☐G87A9155100842

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 0.5, 0.8, 2.0 **Cooler Temp Corrected (°C):** 0.5, 0.8, 2.0 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** TRUE **Date and Initials of Person Examining Contents:** 3-17-18 SDD

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☒Yes	☐No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☒Yes	☐No	☐N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	~~☒Yes~~ SDD 3-17-18	☒No		12. extra sample: * Primary School Well-GW-031518 09:00
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	13. ☒HNO_3 ☒H_2SO_4 ☒NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒Yes	☐No	☐N/A	Sample # 1-13: ✓ ✓ ✓
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☒No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐Yes ☐No

Person Contacted: Jonathan Espinoza Date/Time: 03/19/18

Comments/Resolution:

* Sample "MW10S-GW-031618" on COC labeled as "MW7S-GW-031618" on Samples. Both times at 1045

Analyze Primary School well and MW10S should be MW7S

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1030	Temp: 0.5, 0.8, 2.0	Corrected Temp: 0.5, 0.8, 2.0
Time: 1050	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/20/18

Note: Whenever there is a discrepancy affecting North Carolina compl[iance …] [thi]s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: W

Workorder: 10424011 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 3/17/2018 Results Requested By: 4/2/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	MarlowWellW20-GW-031518	PS	3/15/2018 10:15	10424011001	Water	2	X	
2	MWID-GW-031518	PS	3/15/2018 12:05	10424011002	Water	2	X	
3	MW2D-GW-031518	PS	3/15/2018 14:40	10424011003	Water	2	X	
4	MW20D-GW-031518	PS	3/15/2018 16:00	10424011004	Water	2	X	
5	MW6S-GW-031618	PS	3/16/2018 08:30	10424011005	Water	2	X	
6	MW11S-GW-031618	PS	3/16/2018 09:15	10424011006	Water	2	X	
7	MW10S-GW-031618	PS	3/16/2018 09:30	10424011007	Water	2	X	
8	MW12S-GW-031618	PS	3/16/2018 10:15	10424011008	Water	2	X	
9	MW8S-GW-031618	PS	3/16/2018 10:30	10424011009	Water	2	X	
10	MW7S-GW-031618	PS	3/16/2018 10:45	10424011010	Water	2	X	
11	MW1S-GW-031618	PS	3/16/2018 11:05	10424011011	Water	2	X	
12	MW9S-GW-031618	PS	3/16/2018 11:45	10424011012	Water	2	X	
13	Primary School Well-GW-031518	PS	3/15/2018 09:00	10424011013	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	3/20/18 1625	R Clapp	3-20-18 1830
2	R Clapp	3-20-18 2315	[signature]	3/21/18 0815
3				

Comments

Cooler Temperature on Receipt 2.0 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.*

	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
Pace Analytical®	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #: **WO#:12106086**

PM: HRZ Due Date: 04/02/18
CLIENT: Pace WA

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.7 Cooler Temp Corrected °C: 2.0 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: 3-20-18 DC

Comments: AL 3/21/18

	Yes	No	N/A	Comments
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☑	☐	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑	☐	☐	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐	☐	☑	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather [signature] Date: 3/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#:2072931

2072931

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10424011 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/17/2018 **Results Requested By:** 4/2/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis: 5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	MarlowWellW20-GW-031518	PS	3/15/2018 10:15	10424011001	Water	1	X	
2	MWID-GW-031518	PS	3/15/2018 12:05	10424011002	Water	1	X	
3	MW2D-GW-031518	PS	3/15/2018 14:40	10424011003	Water	1	X	
4	MW20D-GW-031518	PS	3/15/2018 16:00	10424011004	Water	1	X	
5	MW6S-GW-031618	PS	3/16/2018 08:30	10424011005	Water	1	X	
6	MW11S-GW-031618	PS	3/16/2018 09:15	10424011006	Water	1	X	
7	MW10S-GW-031618	PS	3/16/2018 09:30	10424011007	Water	1	X	
8	MW12S-GW-031618	PS	3/16/2018 10:15	10424011008	Water	1	X	
9	MW8S-GW-031618	PS	3/16/2018 10:30	10424011009	Water	1	X	
10	MW7S-GW-031618	PS	3/16/2018 10:45	10424011010	Water	1	X	
11	MW1S-GW-031618	PS	3/16/2018 11:05	10424011011	Water	1	X	
12	MW9S-GW-031618	PS	3/16/2018 11:45	10424011012	Water	1	X	
13	Primary School Well-GW-031518	PS	3/15/2018 09:00	10424011013	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	3/20/18 1530	FedEx	
2	FedEx	3/20/18 0850	[signature] Pace	3/20/18 0850
3				

Comments

Cooler Temperature on Receipt 0.6 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical
1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #:

WO#:2072931
PM: CMM Due Date: 03/30/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 3/21/18 RL

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☐ Yes	☒ No	☐ N/A	1
Chain of Custody Present:	☒ Yes	☐ No	☐ N/A	2
Chain of Custody Complete:	☒ Yes	☐ No	☐ N/A	3
Chain of Custody Relinquished:	☒ Yes	☐ No	☐ N/A	4
Sampler Name & Signature on COC:	☒ Yes	☐ No	☐ N/A	5
Samples Arrived within Hold Time:	☒ Yes	☐ No	☐ N/A	6
Sufficient Volume:	☒ Yes	☐ No	☐ N/A	7
Correct Containers Used:	☒ Yes	☐ No	☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes	☐ No	☒ N/A	9
Sample Labels match COC:	☒ Yes	☐ No	☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒ Yes	☐ No	☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒ Yes	☐ No	☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒ Yes	☐ No	☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes	☐ No	☒ N/A	14
Trip Blank Present:	☐ Yes	☒ No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 30, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424012001	**MarlowWell2-GW-031618**	Water	03/16/18 13:10	03/17/18 09:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424012001	**MarlowWell2-GW-031618**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424012001	**MarlowWell2-GW-031618**					
RSK 175	Methane	42.1	ug/L	10.0	03/21/18 11:15	
EPA 6010D	Barium, Dissolved	22.2	ug/L	10.0	03/22/18 11:45	
EPA 6010D	Calcium, Dissolved	55800	ug/L	500	03/22/18 11:45	
EPA 6010D	Iron, Dissolved	1190	ug/L	50.0	03/22/18 11:45	
EPA 6010D	Magnesium, Dissolved	15900	ug/L	500	03/22/18 11:45	
EPA 6010D	Manganese, Dissolved	141	ug/L	5.0	03/22/18 11:45	
EPA 6010D	Potassium, Dissolved	931J	ug/L	2500	03/22/18 11:45	
EPA 6010D	Sodium, Dissolved	15100	ug/L	1000	03/22/18 11:45	
EPA 6010D	Vanadium, Dissolved	4.6J	ug/L	15.0	03/22/18 11:45	
EPA 6010D	Zinc, Dissolved	12.1J	ug/L	20.0	03/22/18 11:45	
SM 2320B	Alkalinity, Total as CaCO3	220	mg/L	5.0	03/23/18 10:37	
SM 2540C	Total Dissolved Solids	276	mg/L	10.0	03/22/18 15:41	
EPA 300.0	Chloride	4.1	mg/L	1.2	03/17/18 18:25	FS
EPA 300.0	Nitrate as N	1.8	mg/L	0.10	03/17/18 18:25	FS
EPA 300.0	Sulfate	5.5	mg/L	1.2	03/17/18 18:25	FS
EPA 353.2	Nitrogen, NO2 plus NO3	1.8	mg/L	0.020	03/21/18 13:09	
SM 5310C	Total Organic Carbon	1.7	mg/L	1.0	03/27/18 00:57	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 528320

R1: RPD value was outside control limits.

- DUP (Lab ID: 2867430)
  - Methane

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424012

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528719

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424011008,10424011009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2869515)
  - Alkalinity, Total as CaCO3

Additional Comments:

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 104738

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2072923001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 451548)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 527852

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424011008,10424011010

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2864916)
    - Chloride
    - Nitrate as N
    - Sulfate
- MS (Lab ID: 2864918)
    - Nitrate as N
- MSD (Lab ID: 2864917)
    - Chloride
    - Nitrate as N
    - Sulfate
- MSD (Lab ID: 2864919)
    - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 139317

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424511001,12106209001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 551837)
  - Total Organic Carbon
- MSD (Lab ID: 551838)
  - Total Organic Carbon

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Sample: MarlowWell2-GW-031618 **Lab ID: 10424012001** Collected: 03/16/18 13:10 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/21/18 11:15	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/21/18 11:15	74-85-1	
Methane	**42.1**	ug/L	10.0	1.1	1		03/21/18 11:15	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/20/18 09:53	03/22/18 11:45	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/20/18 09:53	03/22/18 11:45	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/20/18 09:53	03/22/18 11:45	7440-38-2	
Barium, Dissolved	**22.2**	ug/L	10.0	0.22	1	03/20/18 09:53	03/22/18 11:45	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/20/18 09:53	03/22/18 11:45	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/20/18 09:53	03/22/18 11:45	7440-43-9	
Calcium, Dissolved	**55800**	ug/L	500	24.7	1	03/20/18 09:53	03/22/18 11:45	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/20/18 09:53	03/22/18 11:45	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/20/18 09:53	03/22/18 11:45	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/20/18 09:53	03/22/18 11:45	7440-50-8	
Iron, Dissolved	**1190**	ug/L	50.0	16.7	1	03/20/18 09:53	03/22/18 11:45	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/20/18 09:53	03/22/18 11:45	7439-92-1	
Magnesium, Dissolved	**15900**	ug/L	500	2.6	1	03/20/18 09:53	03/22/18 11:45	7439-95-4	
Manganese, Dissolved	**141**	ug/L	5.0	0.38	1	03/20/18 09:53	03/22/18 11:45	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/20/18 09:53	03/22/18 11:45	7440-02-0	
Potassium, Dissolved	**931J**	ug/L	2500	126	1	03/20/18 09:53	03/22/18 11:45	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/20/18 09:53	03/22/18 11:45	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/20/18 09:53	03/22/18 11:45	7440-22-4	
Sodium, Dissolved	**15100**	ug/L	1000	44.6	1	03/20/18 09:53	03/22/18 11:45	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/20/18 09:53	03/22/18 11:45	7440-28-0	
Vanadium, Dissolved	**4.6J**	ug/L	15.0	0.42	1	03/20/18 09:53	03/22/18 11:45	7440-62-2	
Zinc, Dissolved	**12.1J**	ug/L	20.0	1.8	1	03/20/18 09:53	03/22/18 11:45	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/20/18 08:34	03/22/18 19:27	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**220**	mg/L	5.0	1.4	1		03/23/18 10:37		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**276**	mg/L	10.0	5.0	1		03/22/18 15:41		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/21/18 13:19	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.1**	mg/L	1.2	0.14	1		03/17/18 18:25	16887-00-6	FS
Nitrate as N	**1.8**	mg/L	0.10	0.0079	1		03/17/18 18:25	14797-55-8	FS
Sulfate	**5.5**	mg/L	1.2	0.27	1		03/17/18 18:25	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Sample: MarlowWell2-GW-031618 **Lab ID: 10424012001** Collected: 03/16/18 13:10 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.8**	mg/L	0.020	0.0075	1		03/21/18 13:09		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:08		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.20	1		03/27/18 00:57	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 528320 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10424012001

METHOD BLANK: 2867427 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/21/18 08:58	
Ethene	ug/L	<0.68	10.0	0.68	03/21/18 08:58	
Methane	ug/L	2.8J	10.0	1.1	03/21/18 08:58	

LABORATORY CONTROL SAMPLE & LCSD: 2867428 | 2867429

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	108	104	95	91	85-115	4	20	
Ethene	ug/L	106	100	96.8	95	91	85-115	4	20	
Methane	ug/L	60.7	57.9	55.4	95	91	85-115	4	20	

SAMPLE DUPLICATE: 2867430

Parameter	Units	10424007019 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	27.2	39.2	36	20	R1

SAMPLE DUPLICATE: 2867431

Parameter	Units	10424011009 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<4.9	<4.9		20	
Ethene	ug/L	<0.68	<0.68		20	
Methane	ug/L	1.8J	2.3J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 527904 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10424012001

METHOD BLANK: 2865135 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/22/18 18:25	

LABORATORY CONTROL SAMPLE: 2865136

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865137 2865138

Parameter	Units	10423831002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.4	5.5	108	109	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 527900 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10424012001

METHOD BLANK: 2865119 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/22/18 10:30	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/22/18 10:30	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/22/18 10:30	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/22/18 10:30	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/22/18 10:30	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/22/18 10:30	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/22/18 10:30	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/22/18 10:30	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/22/18 10:30	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/22/18 10:30	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/22/18 10:30	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/22/18 10:30	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/22/18 10:30	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/22/18 10:30	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/22/18 10:30	
Potassium, Dissolved	ug/L	<126	2500	126	03/22/18 10:30	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/22/18 10:30	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/22/18 10:30	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/22/18 10:30	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/22/18 10:30	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/22/18 10:30	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/22/18 10:30	

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21300	107	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	995	99	80-120	
Iron, Dissolved	ug/L	20000	20400	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Magnesium, Dissolved	ug/L	20000	20200	101	80-120	
Manganese, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

LABORATORY CONTROL SAMPLE: 2865120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20100	100	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	494	99	80-120	
Sodium, Dissolved	ug/L	20000	20000	100	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	986	99	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865121 2865122

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21300	21500	107	108	75-125	1	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1040	1040	103	103	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	102	104	75-125	1	20	
Barium, Dissolved	ug/L	27.3	1000	1000	1050	1050	102	103	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	1	20	
Calcium, Dissolved	ug/L	53100	20000	20000	72100	71600	95	93	75-125	1	20	
Chromium, Dissolved	ug/L	1.5J	1000	1000	1000	1010	100	101	75-125	1	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	996	1000	100	100	75-125	1	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	996	1010	100	101	75-125	1	20	
Iron, Dissolved	ug/L	22.8J	20000	20000	20200	20400	101	102	75-125	1	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1020	101	102	75-125	1	20	
Magnesium, Dissolved	ug/L	14100	20000	20000	34200	34300	100	101	75-125	0	20	
Manganese, Dissolved	ug/L	6.6	1000	1000	1020	1030	102	102	75-125	1	20	
Nickel, Dissolved	ug/L	16.3J	1000	1000	1010	1020	99	100	75-125	1	20	
Potassium, Dissolved	ug/L	2610	20000	20000	23500	23600	104	105	75-125	0	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1060	1060	106	106	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	494	498	99	100	75-125	1	20	
Sodium, Dissolved	ug/L	29300	20000	20000	48700	48700	97	97	75-125	0	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	990	998	99	99	75-125	1	20	
Vanadium, Dissolved	ug/L	5.8J	1000	1000	989	997	98	99	75-125	1	20	
Zinc, Dissolved	ug/L	4.1J	1000	1000	1000	1010	100	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 528719 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10424012001

METHOD BLANK: 2869512 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/23/18 09:35	

LABORATORY CONTROL SAMPLE & LCSD: 2869513 2869514

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.4	42.4	98	106	90-110	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869515 2869516

Parameter	Units	10424011008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	243	40	40	296	286	134	110	80-120	3	30	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869517 2869518

Parameter	Units	10424011009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	86.4	40	40	126	126	98	99	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 528598 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10424012001

METHOD BLANK: 2868765 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/22/18 15:41	

LABORATORY CONTROL SAMPLE & LCSD: 2868766 | 2868767

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	988	978	99	98	80-120	1	10	

SAMPLE DUPLICATE: 2868768

Parameter	Units	10424009002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2280	2210	3	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 104738
Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10424012001

METHOD BLANK: 451545 Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/21/18 13:13	

LABORATORY CONTROL SAMPLE: 451546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 451548

Parameter	Units	2072923001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.020	10	75-125	M1

SAMPLE DUPLICATE: 451547

Parameter	Units	2072923001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0050		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 527852 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10424012001

METHOD BLANK: 2864914 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.29J	1.2	0.14	03/17/18 12:39	FS
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/17/18 12:39	FS
Sulfate	mg/L	0.49J	1.2	0.27	03/17/18 12:39	FS

LABORATORY CONTROL SAMPLE: 2864915

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.3	98	90-110	FS
Nitrate as N	mg/L	1	0.96	96	90-110	FS
Sulfate	mg/L	12.5	12.3	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2864916 2864917

Parameter	Units	10424011008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	40.2	12.5	12.5	48.3	48.3	65	65	90-110	0	20	FS,M1
Nitrate as N	mg/L	7.4	1	1	7.6	7.6	23	24	90-110	0	20	FS,M1
Sulfate	mg/L	38.0	12.5	12.5	46.8	46.9	71	71	90-110	0	20	FS,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2864918 2864919

Parameter	Units	10424011010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.4	12.5	12.5	14.3	14.3	96	95	90-110	0	20	FS
Nitrate as N	mg/L	1.2	1	1	2.1	2.1	89	89	90-110	0	20	FS,M1
Sulfate	mg/L	2.9	12.5	12.5	15.0	15.0	97	97	90-110	0	20	FS

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 528131 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10424012001

METHOD BLANK: 2866254 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/21/18 13:11	FS

LABORATORY CONTROL SAMPLE: 2866255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866256 2866257

Parameter	Units	10424020001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.95	1	1	1.9	1.9	96	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2866258 2866259

Parameter	Units	10423831001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.9	10	10	15.3	15.2	94	93	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 529617
Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4
Analysis Description: 410.4 COD
Associated Lab Samples: 10424012001

METHOD BLANK: 2874644
Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/30/18 10:05	

LABORATORY CONTROL SAMPLE: 2874645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874646 2874647

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	254	255	100	101	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874648 2874649

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	253	260	99	102	90-110	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

QC Batch: 139317 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10424012001

METHOD BLANK: 551835 | Matrix: Water
Associated Lab Samples: 10424012001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/26/18 20:15	

LABORATORY CONTROL SAMPLE: 551836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 551837 551838

Parameter	Units	10424511001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	125	125	98.2	99.4	78	79	80-120	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 551839 551840

Parameter	Units	12106209001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	18.7	25	25	43.0	42.7	97	96	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424012

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424012

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424012001	**MarlowWell2-GW-031618**	RSK 175	528320		
10424012001	**MarlowWell2-GW-031618**	EPA 3010	527900	EPA 6010D	528178
10424012001	**MarlowWell2-GW-031618**	EPA 7470A	527904	EPA 7470A	528184
10424012001	**MarlowWell2-GW-031618**	SM 2320B	528719		
10424012001	**MarlowWell2-GW-031618**	SM 2540C	528598		
10424012001	**MarlowWell2-GW-031618**	SM 4500-S-2 D	104738		
10424012001	**MarlowWell2-GW-031618**	EPA 300.0	527852		
10424012001	**MarlowWell2-GW-031618**	EPA 353.2	528131		
10424012001	**MarlowWell2-GW-031618**	EPA 410.4	529617	EPA 410.4	529850
10424012001	**MarlowWell2-GW-031618**	SM 5310C	139317		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be

WO# : 10424012

10424012

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MarlowWell2-GW-031618	WT	G	3/16	1310	—	—	—	9		X	X		X				X	X	X	X	X	X	X	X	X		48 hr hold
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	JE / CH2M	3/16/18	1530	[signature] Pace	3-17-18	920	0.5	Y	Y	Y
*Field filtered by client							0.8			
							2.0			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: JE

DATE Signed: 3/16/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#:10424012 PM: JMG Due Date: 04/02/18 CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:______

Tracking Number: 7448-1032-7999, -8002, -8013

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:______ **Temp Blank?** ☒Yes ☐No

Thermometer Used: ☒151401163 ☐G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 0.5, 0.8, 2.0 **Cooler Temp Corrected (°C):** 0.5, 0.8, 2.0 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** TRUE **Date and Initials of Person Examining Contents:** 3-17-18 JDD

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☒Yes	☐No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☒Yes	☐No	☐N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	13. ☒HNO_3 ☒H_2SO_4 ☒NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒Yes	☐No	☐N/A	Sample # 1: 1 1 1
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed:______ Lot # of added preservative:______
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
3 Trip Blanks Present?	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased):______				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: ______ Date/Time: ______

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1030	Temp: 0.5, 0.8, 2.0	Corrected Temp: 0.5, 0.8, 2.0
Time: 1050	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/19/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s... n will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 2072901

2072901

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10424012 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/17/2018 **Results Requested By:** 4/2/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	MarlowWell2-GW-031618	PS	3/16/2018 13:10	10424012001	Water	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	3/19/18 1630	Fed Ex	
2	Fed Ex	3/20/18 1015	[signature] Pace	3/20/18 1015
3				

Comments

Cooler Temperature on Receipt 0.7 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

Sample Condition Upon Receip

1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Project #

WO#: 2072901
PM: CMM Due Date: 04/03/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet (circled) Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/20/18 RC

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☐Yes	☒No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	5
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	6
Sufficient Volume:	☒Yes	☐No	☐N/A	7
Correct Containers Used:	☒Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	9
Sample Labels match COC:	☒Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	14
Trip Blank Present:	☐Yes	☒No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: __________

Comments/ Resolution: ______________________

WO#: 12106087

PM: HRZ Due Date: 04/02/18

CLIENT: Pace WA

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10424012 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 3/17/2018 Results Requested By: 4/2/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4						Requested Analysis: 5632354 / 5310 TOC												LAB USE ONLY
1	MarlowWell2-GW-031618	PS	3/16/2018 13:10	10424012001	Water	2						X												
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] Pace	3/20/18 1525	[illegible]	3-20-18 1830
2	[illegible]	3-20-18 2315	[illegible]	3/21/18 0815
3				

Comments

Cooler Temperature on Receipt 2.0 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #: **WO#:12106087**

PM: HRZ Due Date: 04/03/18

CLIENT: Pace WA

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.7 Cooler Temp Corrected °C: 2.0

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3

Date and Initials of Person Examining Contents: 3-20-18 DC

Comments: AL 3/21/18

	Yes	No	N/A	
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☑	☐	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑	☐	☐	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐	☐	☑	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather Zito **Date:** 3/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424013

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424013001	**MarlowWellW20-GW-031518**	Water	03/15/18 10:15	03/17/18 09:20
10424013002	**MW1D-GW-031518**	Water	03/15/18 12:05	03/17/18 09:20
10424013003	**MW2D-GW-031518**	Water	03/15/18 14:40	03/17/18 09:20
10424013004	**MW20D-GW-031518**	Water	03/15/18 16:00	03/17/18 09:20
10424013005	**MW6S-GW-031618**	Water	03/16/18 08:30	03/17/18 09:20
10424013006	**MW11S-GW-031618**	Water	03/16/18 09:15	03/17/18 09:20
10424013007	**MW10S-GW-031618**	Water	03/16/18 09:30	03/17/18 09:20
10424013008	**MW12S-GW-031618**	Water	03/16/18 10:15	03/17/18 09:20
10424013009	**MW8S-GW-031618**	Water	03/16/18 10:30	03/17/18 09:20
10424013010	**MW7S-GW-031618**	Water	03/16/18 10:45	03/17/18 09:20
10424013011	**MW1S-GW-031618**	Water	03/16/18 11:05	03/17/18 09:20
10424013012	**MW9S-GW-031618**	Water	03/16/18 11:45	03/17/18 09:20
10424013013	**Trip Blank**	Water	03/16/18 00:00	03/17/18 09:20
10424013014	**Primary School Well-GW-031518**	Water	03/15/18 09:00	03/17/18 09:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424013001	**MarlowWellW20-GW-031518**	EPA 8260B	AEZ	83	PASI-M
10424013002	**MW1D-GW-031518**	EPA 8260B	AEZ	83	PASI-M
10424013003	**MW2D-GW-031518**	EPA 8260B	AEZ	83	PASI-M
10424013004	**MW20D-GW-031518**	EPA 8260B	AEZ	83	PASI-M
10424013005	**MW6S-GW-031618**	EPA 8260B	DJB	83	PASI-M
10424013006	**MW11S-GW-031618**	EPA 8260B	DJB	83	PASI-M
10424013007	**MW10S-GW-031618**	EPA 8260B	AEZ	83	PASI-M
10424013008	**MW12S-GW-031618**	EPA 8260B	DJB	83	PASI-M
10424013009	**MW8S-GW-031618**	EPA 8260B	AEZ	83	PASI-M
10424013010	**MW7S-GW-031618**	EPA 8260B	DJB	83	PASI-M
10424013011	**MW1S-GW-031618**	EPA 8260B	DJB	83	PASI-M
10424013012	**MW9S-GW-031618**	EPA 8260B	AEZ	83	PASI-M
10424013013	**Trip Blank**	EPA 8260B	DJB	83	PASI-M
10424013014	**Primary School Well-GW-031518**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424013001	**MarlowWellW20-GW-031518**					
EPA 8260B	1,2,4-Trimethylbenzene	0.22J	ug/L	0.50	03/22/18 05:23	
EPA 8260B	Benzene	0.14J	ug/L	0.50	03/22/18 05:23	
10424013003	**MW2D-GW-031518**					
EPA 8260B	Carbon tetrachloride	1.2	ug/L	0.50	03/22/18 06:10	
10424013004	**MW20D-GW-031518**					
EPA 8260B	Carbon tetrachloride	29.5	ug/L	0.50	03/22/18 06:34	
EPA 8260B	Chloroform	1.3	ug/L	1.0	03/22/18 06:34	
10424013007	**MW10S-GW-031618**					
EPA 8260B	Carbon tetrachloride	7.3	ug/L	1.0	03/24/18 05:47	
10424013009	**MW8S-GW-031618**					
EPA 8260B	Carbon tetrachloride	147	ug/L	2.0	03/28/18 08:08	
EPA 8260B	Chloroform	49.2	ug/L	1.0	03/24/18 06:35	
10424013012	**MW9S-GW-031618**					
EPA 8260B	Carbon tetrachloride	289	ug/L	5.0	03/24/18 10:32	
EPA 8260B	Chloroform	53.4	ug/L	2.0	03/24/18 10:56	
EPA 8260B	Methyl-tert-butyl ether	1.7	ug/L	1.0	03/24/18 10:56	
10424013013	**Trip Blank**					
EPA 8260B	Chloroform	0.62J	ug/L	1.0	03/30/18 02:54	
10424013014	**Primary School Well-GW-031518**					
EPA 8260B	Carbon tetrachloride	33.6	ug/L	1.0	03/24/18 07:46	
EPA 8260B	Chloroform	1.7	ug/L	1.0	03/24/18 07:46	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
14 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 528473

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 2868172)
  - Bromomethane
- DUP (Lab ID: 2868193)
  - Bromomethane
- LCS (Lab ID: 2868173)
  - Bromomethane
- LCSD (Lab ID: 2868192)
  - Bromomethane
- MS (Lab ID: 2868194)
  - Bromomethane
- MW1D-GW-031518 (Lab ID: 10424013002)
  - Bromomethane
- MW20D-GW-031518 (Lab ID: 10424013004)
  - Bromomethane
- MW2D-GW-031518 (Lab ID: 10424013003)
  - Bromomethane
- MarlowWellW20-GW-031518 (Lab ID: 10424013001)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528473

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 529717

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MarlowWellW20-GW-031518 **Lab ID: 10424013001** Collected: 03/15/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 05:23	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:23	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 05:23	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 05:23	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 05:23	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:23	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:23	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 05:23	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:23	120-82-1	
1,2,4-Trimethylbenzene	**0.22J**	ug/L	0.50	0.098	1		03/22/18 05:23	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 05:23	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 05:23	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 05:23	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:23	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 05:23	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 05:23	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:23	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:23	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:23	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 05:23	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 05:23	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 05:23	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 05:23	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 05:23	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:23	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 05:23	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:23	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 05:23	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 05:23	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 05:23	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 05:23	107-13-1	
Benzene	**0.14J**	ug/L	0.50	0.13	1		03/22/18 05:23	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:23	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 05:23	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:23	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 05:23	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 05:23	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 05:23	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:23	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 05:23	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 05:23	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 05:23	74-87-3	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MarlowWellW20-GW-031518 **Lab ID: 10424013001** Collected: 03/15/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 05:23	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 05:23	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 05:23	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 05:23	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 05:23	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:23	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 05:23	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 05:23	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 05:23	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:23	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 05:23	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 05:23	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 05:23	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:23	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 05:23	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 05:23	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 05:23	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:23	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:23	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 05:23	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:23	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:23	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 05:23	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:23	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:23	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 05:23	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:23	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 05:23	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:23	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 05:23	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		03/22/18 05:23	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		03/22/18 05:23	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		03/22/18 05:23	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW1D-GW-031518 **Lab ID: 10424013002** Collected: 03/15/18 12:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 05:47	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:47	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 05:47	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 05:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 05:47	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:47	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:47	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 05:47	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:47	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 05:47	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 05:47	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 05:47	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 05:47	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:47	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 05:47	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 05:47	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 05:47	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:47	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 05:47	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 05:47	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 05:47	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 05:47	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 05:47	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:47	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 05:47	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 05:47	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 05:47	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 05:47	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 05:47	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:47	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 05:47	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:47	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 05:47	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 05:47	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 05:47	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:47	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 05:47	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 05:47	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 05:47	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 05:47	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW1D-GW-031518 **Lab ID: 10424013002** Collected: 03/15/18 12:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 05:47	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 05:47	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 05:47	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 05:47	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 05:47	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 05:47	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 05:47	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 05:47	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 05:47	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 05:47	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 05:47	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 05:47	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 05:47	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 05:47	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 05:47	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:47	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 05:47	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 05:47	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:47	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 05:47	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:47	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 05:47	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 05:47	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 05:47	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 05:47	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 05:47	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 05:47	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		03/22/18 05:47	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		03/22/18 05:47	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/22/18 05:47	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW2D-GW-031518 **Lab ID: 10424013003** Collected: 03/15/18 14:40 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 06:10	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:10	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 06:10	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 06:10	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 06:10	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:10	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:10	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 06:10	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:10	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 06:10	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 06:10	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 06:10	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 06:10	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:10	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 06:10	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 06:10	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:10	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:10	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 06:10	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 06:10	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 06:10	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 06:10	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 06:10	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:10	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 06:10	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 06:10	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 06:10	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 06:10	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 06:10	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:10	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 06:10	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:10	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 06:10	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 06:10	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 06:10	75-15-0	
Carbon tetrachloride	**1.2**	ug/L	0.50	0.20	1		03/22/18 06:10	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 06:10	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/22/18 06:10	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 06:10	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 06:10	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW2D-GW-031518 **Lab ID: 10424013003** Collected: 03/15/18 14:40 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 06:10	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 06:10	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 06:10	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 06:10	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 06:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 06:10	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 06:10	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:10	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 06:10	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 06:10	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 06:10	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 06:10	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 06:10	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 06:10	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:10	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:10	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 06:10	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:10	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:10	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 06:10	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:10	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:10	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 06:10	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:10	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 06:10	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:10	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 06:10	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/22/18 06:10	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		03/22/18 06:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/22/18 06:10	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW20D-GW-031518 **Lab ID: 10424013004** Collected: 03/15/18 16:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		03/22/18 06:34	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:34	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/22/18 06:34	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/22/18 06:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/22/18 06:34	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:34	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:34	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/22/18 06:34	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:34	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/22/18 06:34	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/22/18 06:34	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/22/18 06:34	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 06:34	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:34	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/22/18 06:34	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/22/18 06:34	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/22/18 06:34	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:34	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/22/18 06:34	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/22/18 06:34	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/22/18 06:34	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/22/18 06:34	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/22/18 06:34	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:34	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/22/18 06:34	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/22/18 06:34	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/22/18 06:34	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/22/18 06:34	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/22/18 06:34	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:34	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 06:34	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:34	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/22/18 06:34	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/22/18 06:34	74-83-9	CL
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/22/18 06:34	75-15-0	
Carbon tetrachloride	**29.5**	ug/L	0.50	0.20	1		03/22/18 06:34	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/22/18 06:34	75-00-3	
Chloroform	**1.3**	ug/L	1.0	0.46	1		03/22/18 06:34	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/22/18 06:34	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/22/18 06:34	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW20D-GW-031518 **Lab ID: 10424013004** Collected: 03/15/18 16:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/22/18 06:34	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/22/18 06:34	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/22/18 06:34	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/22/18 06:34	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/22/18 06:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/22/18 06:34	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/22/18 06:34	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/22/18 06:34	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/22/18 06:34	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/22/18 06:34	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/22/18 06:34	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/22/18 06:34	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/22/18 06:34	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/22/18 06:34	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/22/18 06:34	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:34	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/22/18 06:34	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/22/18 06:34	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:34	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/22/18 06:34	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:34	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/22/18 06:34	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/22/18 06:34	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/22/18 06:34	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/22/18 06:34	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/22/18 06:34	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/22/18 06:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		03/22/18 06:34	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/22/18 06:34	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/22/18 06:34	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW6S-GW-031618 **Lab ID: 10424013005** Collected: 03/16/18 08:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 04:29	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 04:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 04:29	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:29	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:29	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 04:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 04:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 04:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 04:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 04:29	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 04:29	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 04:29	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 04:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:29	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 04:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 04:29	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 04:29	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 04:29	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 04:29	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:29	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 04:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 04:29	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 04:29	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 04:29	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 04:29	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:29	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 04:29	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:29	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 04:29	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 04:29	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 04:29	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:29	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 04:29	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 04:29	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 04:29	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 04:29	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW6S-GW-031618 **Lab ID: 10424013005** Collected: 03/16/18 08:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 04:29	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 04:29	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 04:29	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 04:29	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 04:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 04:29	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 04:29	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:29	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:29	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 04:29	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 04:29	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 04:29	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 04:29	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 04:29	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 04:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:29	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 04:29	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 04:29	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:29	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:29	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 04:29	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:29	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:29	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:29	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 04:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:29	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 04:29	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 04:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/30/18 04:29	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/30/18 04:29	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/30/18 04:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW11S-GW-031618 **Lab ID: 10424013006** Collected: 03/16/18 09:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 04:52	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 04:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 04:52	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:52	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:52	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 04:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 04:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 04:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 04:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 04:52	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 04:52	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 04:52	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 04:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 04:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:52	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 04:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 04:52	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 04:52	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 04:52	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 04:52	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:52	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 04:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 04:52	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 04:52	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 04:52	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 04:52	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:52	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 04:52	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:52	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 04:52	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 04:52	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 04:52	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:52	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 04:52	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 04:52	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 04:52	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 04:52	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW11S-GW-031618 **Lab ID: 10424013006** Collected: 03/16/18 09:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 04:52	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 04:52	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 04:52	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 04:52	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 04:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 04:52	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 04:52	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:52	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 04:52	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 04:52	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 04:52	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 04:52	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 04:52	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 04:52	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 04:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 04:52	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 04:52	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 04:52	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 04:52	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:52	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 04:52	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 04:52	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:52	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 04:52	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 04:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 04:52	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 04:52	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 04:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 04:52	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 04:52	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 04:52	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/30/18 04:52	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW10S-GW-031618 **Lab ID: 10424013007** Collected: 03/16/18 09:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 05:47	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/24/18 05:47	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/24/18 05:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/24/18 05:47	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 05:47	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 05:47	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/24/18 05:47	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 05:47	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/24/18 05:47	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/24/18 05:47	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/24/18 05:47	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 05:47	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 05:47	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/24/18 05:47	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/24/18 05:47	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 05:47	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 05:47	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/24/18 05:47	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/24/18 05:47	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/24/18 05:47	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/24/18 05:47	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/24/18 05:47	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 05:47	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/24/18 05:47	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/24/18 05:47	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/24/18 05:47	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/24/18 05:47	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/24/18 05:47	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 05:47	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 05:47	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		03/24/18 05:47	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/24/18 05:47	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/24/18 05:47	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/24/18 05:47	75-15-0	
Carbon tetrachloride	**7.3**	ug/L	1.0	0.20	1		03/24/18 05:47	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/24/18 05:47	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/24/18 05:47	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/24/18 05:47	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW10S-GW-031618 **Lab ID: 10424013007** Collected: 03/16/18 09:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/24/18 05:47	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/24/18 05:47	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 05:47	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/24/18 05:47	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/24/18 05:47	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/24/18 05:47	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/24/18 05:47	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 05:47	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/24/18 05:47	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/24/18 05:47	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/24/18 05:47	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/24/18 05:47	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/24/18 05:47	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/24/18 05:47	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 05:47	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 05:47	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/24/18 05:47	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 05:47	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 05:47	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/24/18 05:47	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 05:47	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/24/18 05:47	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/24/18 05:47	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/24/18 05:47	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 05:47	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 05:47	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/24/18 05:47	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/24/18 05:47	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/24/18 05:47	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		03/24/18 05:47	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424013

Sample: MW12S-GW-031618 **Lab ID: 10424013008** Collected: 03/16/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 05:16	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 05:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 05:16	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:16	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:16	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:16	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 05:16	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 05:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 05:16	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 05:16	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 05:16	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 05:16	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:16	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 05:16	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 05:16	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:16	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:16	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 05:16	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 05:16	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 05:16	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 05:16	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 05:16	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:16	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 05:16	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 05:16	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 05:16	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 05:16	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 05:16	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:16	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 05:16	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:16	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 05:16	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 05:16	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 05:16	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:16	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 05:16	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 05:16	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 05:16	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 05:16	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW12S-GW-031618 **Lab ID: 10424013008** Collected: 03/16/18 10:15 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 05:16	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 05:16	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 05:16	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 05:16	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 05:16	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 05:16	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 05:16	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:16	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:16	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 05:16	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 05:16	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 05:16	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 05:16	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 05:16	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 05:16	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:16	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 05:16	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 05:16	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:16	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:16	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 05:16	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:16	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:16	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:16	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 05:16	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:16	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 05:16	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:16	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 05:16	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 05:16	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 05:16	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/30/18 05:16	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW8S-GW-031618 **Lab ID: 10424013009** Collected: 03/16/18 10:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 06:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/24/18 06:35	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/24/18 06:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/24/18 06:35	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 06:35	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 06:35	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/24/18 06:35	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 06:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/24/18 06:35	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/24/18 06:35	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/24/18 06:35	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 06:35	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 06:35	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/24/18 06:35	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/24/18 06:35	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 06:35	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 06:35	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/24/18 06:35	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/24/18 06:35	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/24/18 06:35	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/24/18 06:35	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/24/18 06:35	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 06:35	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/24/18 06:35	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/24/18 06:35	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/24/18 06:35	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/24/18 06:35	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/24/18 06:35	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 06:35	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 06:35	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		03/24/18 06:35	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/24/18 06:35	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/24/18 06:35	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/24/18 06:35	75-15-0	
Carbon tetrachloride	**147**	ug/L	2.0	0.40	2		03/28/18 08:08	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/24/18 06:35	75-00-3	
Chloroform	**49.2**	ug/L	1.0	0.46	1		03/24/18 06:35	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/24/18 06:35	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW8S-GW-031618 **Lab ID: 10424013009** Collected: 03/16/18 10:30 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/24/18 06:35	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/24/18 06:35	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 06:35	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/24/18 06:35	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/24/18 06:35	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/24/18 06:35	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/24/18 06:35	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 06:35	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/24/18 06:35	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/24/18 06:35	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/24/18 06:35	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/24/18 06:35	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/24/18 06:35	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/24/18 06:35	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 06:35	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 06:35	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/24/18 06:35	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 06:35	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 06:35	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/24/18 06:35	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 06:35	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/24/18 06:35	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/24/18 06:35	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/24/18 06:35	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 06:35	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 06:35	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/24/18 06:35	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-125		1		03/24/18 06:35	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/24/18 06:35	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/24/18 06:35	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW7S-GW-031618 **Lab ID: 10424013010** Collected: 03/16/18 10:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 05:40	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 05:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 05:40	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:40	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:40	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 05:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 05:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 05:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 05:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 05:40	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 05:40	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:40	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 05:40	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 05:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 05:40	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:40	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 05:40	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 05:40	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 05:40	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 05:40	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 05:40	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:40	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 05:40	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 05:40	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 05:40	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 05:40	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 05:40	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:40	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 05:40	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:40	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 05:40	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 05:40	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 05:40	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:40	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 05:40	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 05:40	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 05:40	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 05:40	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW7S-GW-031618 **Lab ID: 10424013010** Collected: 03/16/18 10:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 05:40	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 05:40	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 05:40	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 05:40	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 05:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 05:40	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 05:40	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:40	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 05:40	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 05:40	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 05:40	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 05:40	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 05:40	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 05:40	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 05:40	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 05:40	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 05:40	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 05:40	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 05:40	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:40	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 05:40	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 05:40	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:40	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 05:40	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 05:40	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 05:40	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 05:40	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 05:40	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 05:40	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 05:40	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/30/18 05:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 05:40	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW1S-GW-031618 **Lab ID: 10424013011** Collected: 03/16/18 11:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 06:03	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 06:03	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 06:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 06:03	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 06:03	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 06:03	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 06:03	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 06:03	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 06:03	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 06:03	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 06:03	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 06:03	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 06:03	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 06:03	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 06:03	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 06:03	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 06:03	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 06:03	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 06:03	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 06:03	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 06:03	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 06:03	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 06:03	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 06:03	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 06:03	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 06:03	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 06:03	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 06:03	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 06:03	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 06:03	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 06:03	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 06:03	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 06:03	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 06:03	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 06:03	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 06:03	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 06:03	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 06:03	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 06:03	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 06:03	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW1S-GW-031618 **Lab ID: 10424013011** Collected: 03/16/18 11:05 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 06:03	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 06:03	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 06:03	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 06:03	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 06:03	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 06:03	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 06:03	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 06:03	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 06:03	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 06:03	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 06:03	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 06:03	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 06:03	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 06:03	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 06:03	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 06:03	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 06:03	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 06:03	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 06:03	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 06:03	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 06:03	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 06:03	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 06:03	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 06:03	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 06:03	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 06:03	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 06:03	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 06:03	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 06:03	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 06:03	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/30/18 06:03	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/30/18 06:03	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW9S-GW-031618 **Lab ID: 10424013012** Collected: 03/16/18 11:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.29**	ug/L	1.0	0.29	2		03/24/18 10:56	630-20-6	
1,1,1-Trichloroethane	**<0.30**	ug/L	1.0	0.30	2		03/24/18 10:56	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.38**	ug/L	1.0	0.38	2		03/24/18 10:56	79-34-5	
1,1,2-Trichloroethane	**<0.44**	ug/L	1.0	0.44	2		03/24/18 10:56	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.55**	ug/L	2.0	0.55	2		03/24/18 10:56	76-13-1	
1,1-Dichloroethane	**<0.29**	ug/L	1.0	0.29	2		03/24/18 10:56	75-34-3	
1,1-Dichloroethene	**<0.36**	ug/L	2.0	0.36	2		03/24/18 10:56	75-35-4	
1,1-Dichloropropene	**<0.35**	ug/L	2.0	0.35	2		03/24/18 10:56	563-58-6	
1,2,3-Trichlorobenzene	**<0.29**	ug/L	1.0	0.29	2		03/24/18 10:56	87-61-6	
1,2,3-Trichloropropane	**<1.3**	ug/L	8.0	1.3	2		03/24/18 10:56	96-18-4	
1,2,4-Trichlorobenzene	**<0.36**	ug/L	1.0	0.36	2		03/24/18 10:56	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	2		03/24/18 10:56	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.1**	ug/L	8.0	2.1	2		03/24/18 10:56	96-12-8	
1,2-Dibromoethane (EDB)	**<0.34**	ug/L	1.0	0.34	2		03/24/18 10:56	106-93-4	
1,2-Dichlorobenzene	**<0.42**	ug/L	1.0	0.42	2		03/24/18 10:56	95-50-1	
1,2-Dichloroethane	**<0.30**	ug/L	1.0	0.30	2		03/24/18 10:56	107-06-2	
1,2-Dichloroethene (Total)	**<0.82**	ug/L	2.0	0.82	2		03/24/18 10:56	540-59-0	
1,2-Dichloropropane	**<1.2**	ug/L	8.0	1.2	2		03/24/18 10:56	78-87-5	
1,3,5-Trimethylbenzene	**<0.36**	ug/L	1.0	0.36	2		03/24/18 10:56	108-67-8	
1,3-Dichlorobenzene	**<0.32**	ug/L	1.0	0.32	2		03/24/18 10:56	541-73-1	
1,3-Dichloropropane	**<0.26**	ug/L	1.0	0.26	2		03/24/18 10:56	142-28-9	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	2		03/24/18 10:56	106-46-7	
1,4-Dioxane (p-Dioxane)	**<45.2**	ug/L	400	45.2	2		03/24/18 10:56	123-91-1	
2,2,4-Trimethylpentane	**<2.6**	ug/L	8.0	2.6	2		03/24/18 10:56	540-84-1	
2,2-Dichloropropane	**<0.79**	ug/L	2.0	0.79	2		03/24/18 10:56	594-20-7	
2-Butanone (MEK)	**<4.8**	ug/L	10.0	4.8	2		03/24/18 10:56	78-93-3	
2-Chlorotoluene	**<0.41**	ug/L	1.0	0.41	2		03/24/18 10:56	95-49-8	
2-Hexanone	**<5.0**	ug/L	10.0	5.0	2		03/24/18 10:56	591-78-6	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	2		03/24/18 10:56	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<1.1**	ug/L	10.0	1.1	2		03/24/18 10:56	108-10-1	
Acetone	**<17.7**	ug/L	40.0	17.7	2		03/24/18 10:56	67-64-1	
Acrolein	**<9.7**	ug/L	20.0	9.7	2		03/24/18 10:56	107-02-8	
Acrylonitrile	**<9.8**	ug/L	20.0	9.8	2		03/24/18 10:56	107-13-1	
Benzene	**<0.25**	ug/L	1.0	0.25	2		03/24/18 10:56	71-43-2	
Bromobenzene	**<0.31**	ug/L	1.0	0.31	2		03/24/18 10:56	108-86-1	
Bromochloromethane	**<0.76**	ug/L	2.0	0.76	2		03/24/18 10:56	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	2.0	0.40	2		03/24/18 10:56	75-27-4	
Bromoform	**<2.1**	ug/L	8.0	2.1	2		03/24/18 10:56	75-25-2	
Bromomethane	**<3.1**	ug/L	8.0	3.1	2		03/24/18 10:56	74-83-9	
Carbon disulfide	**<0.74**	ug/L	2.0	0.74	2		03/24/18 10:56	75-15-0	
Carbon tetrachloride	**289**	ug/L	5.0	1.0	5		03/24/18 10:32	56-23-5	
Chlorobenzene	**<0.27**	ug/L	1.0	0.27	2		03/24/18 10:56	108-90-7	
Chloroethane	**<0.88**	ug/L	2.0	0.88	2		03/24/18 10:56	75-00-3	
Chloroform	**53.4**	ug/L	2.0	0.92	2		03/24/18 10:56	67-66-3	
Chloromethane	**<2.2**	ug/L	8.0	2.2	2		03/24/18 10:56	74-87-3	
Dibromochloromethane	**<0.27**	ug/L	1.0	0.27	2		03/24/18 10:56	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: MW9S-GW-031618 **Lab ID: 10424013012** Collected: 03/16/18 11:45 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<1.0**	ug/L	2.0	1.0	2		03/24/18 10:56	74-95-3	
Dichlorodifluoromethane	**<0.63**	ug/L	2.0	0.63	2		03/24/18 10:56	75-71-8	
Dichlorofluoromethane	**<0.77**	ug/L	2.0	0.77	2		03/24/18 10:56	75-43-4	
Diisopropyl ether	**<0.25**	ug/L	2.0	0.25	2		03/24/18 10:56	108-20-3	
Ethyl-tert-butyl ether	**<0.26**	ug/L	1.0	0.26	2		03/24/18 10:56	637-92-3	
Ethylbenzene	**<0.27**	ug/L	1.0	0.27	2		03/24/18 10:56	100-41-4	
Hexachloro-1,3-butadiene	**<0.96**	ug/L	2.0	0.96	2		03/24/18 10:56	87-68-3	
Isopropylbenzene (Cumene)	**<0.28**	ug/L	1.0	0.28	2		03/24/18 10:56	98-82-8	
Methyl-tert-butyl ether	**1.7**	ug/L	1.0	0.29	2		03/24/18 10:56	1634-04-4	
Methylene Chloride	**<2.3**	ug/L	8.0	2.3	2		03/24/18 10:56	75-09-2	
Naphthalene	**<0.84**	ug/L	2.0	0.84	2		03/24/18 10:56	91-20-3	
Styrene	**<0.29**	ug/L	1.0	0.29	2		03/24/18 10:56	100-42-5	
Tetrachloroethene	**<0.32**	ug/L	1.0	0.32	2		03/24/18 10:56	127-18-4	
Tetrahydrofuran	**<8.6**	ug/L	20.0	8.6	2		03/24/18 10:56	109-99-9	
Toluene	**<0.34**	ug/L	1.0	0.34	2		03/24/18 10:56	108-88-3	
Trichloroethene	**<0.36**	ug/L	0.80	0.36	2		03/24/18 10:56	79-01-6	
Trichlorofluoromethane	**<0.26**	ug/L	1.0	0.26	2		03/24/18 10:56	75-69-4	
Vinyl acetate	**<3.0**	ug/L	20.0	3.0	2		03/24/18 10:56	108-05-4	
Vinyl chloride	**<0.19**	ug/L	0.40	0.19	2		03/24/18 10:56	75-01-4	
Xylene (Total)	**<0.49**	ug/L	3.0	0.49	2		03/24/18 10:56	1330-20-7	
cis-1,2-Dichloroethene	**<0.40**	ug/L	1.0	0.40	2		03/24/18 10:56	156-59-2	
cis-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	2		03/24/18 10:56	10061-01-5	
m&p-Xylene	**<0.49**	ug/L	2.0	0.49	2		03/24/18 10:56	179601-23-1	
n-Butylbenzene	**<0.27**	ug/L	1.0	0.27	2		03/24/18 10:56	104-51-8	
n-Propylbenzene	**<0.25**	ug/L	1.0	0.25	2		03/24/18 10:56	103-65-1	
o-Xylene	**<0.22**	ug/L	1.0	0.22	2		03/24/18 10:56	95-47-6	
p-Isopropyltoluene	**<0.28**	ug/L	1.0	0.28	2		03/24/18 10:56	99-87-6	
sec-Butylbenzene	**<0.25**	ug/L	1.0	0.25	2		03/24/18 10:56	135-98-8	
tert-Amylmethyl ether	**<0.23**	ug/L	1.0	0.23	2		03/24/18 10:56	994-05-8	
tert-Butyl Alcohol	**<4.4**	ug/L	20.0	4.4	2		03/24/18 10:56	75-65-0	
tert-Butylbenzene	**<0.29**	ug/L	1.0	0.29	2		03/24/18 10:56	98-06-6	
trans-1,2-Dichloroethene	**<0.42**	ug/L	1.0	0.42	2		03/24/18 10:56	156-60-5	
trans-1,3-Dichloropropene	**<0.27**	ug/L	1.0	0.27	2		03/24/18 10:56	10061-02-6	
trans-1,4-Dichloro-2-butene	**<5.7**	ug/L	20.0	5.7	2		03/24/18 10:56	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		2		03/24/18 10:56	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		2		03/24/18 10:56	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		2		03/24/18 10:56	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: Trip Blank **Lab ID: 10424013013** Collected: 03/16/18 00:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 02:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 02:54	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 02:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 02:54	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 02:54	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 02:54	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 02:54	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 02:54	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 02:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 02:54	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 02:54	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 02:54	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 02:54	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 02:54	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 02:54	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 02:54	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 02:54	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 02:54	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 02:54	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 02:54	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 02:54	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 02:54	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 02:54	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 02:54	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 02:54	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 02:54	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 02:54	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 02:54	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 02:54	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 02:54	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 02:54	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 02:54	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 02:54	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 02:54	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 02:54	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 02:54	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 02:54	75-00-3	
Chloroform	**0.62J**	ug/L	1.0	0.46	1		03/30/18 02:54	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 02:54	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 02:54	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: Trip Blank **Lab ID: 10424013013** Collected: 03/16/18 00:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 02:54	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 02:54	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 02:54	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 02:54	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 02:54	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 02:54	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 02:54	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 02:54	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 02:54	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 02:54	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 02:54	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 02:54	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 02:54	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 02:54	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 02:54	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 02:54	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 02:54	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 02:54	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 02:54	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 02:54	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 02:54	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 02:54	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 02:54	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 02:54	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 02:54	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 02:54	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 02:54	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 02:54	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 02:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 02:54	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 02:54	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 02:54	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: Primary School Well-GW-031518 **Lab ID: 10424013014** Collected: 03/15/18 09:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 07:46	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/24/18 07:46	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/24/18 07:46	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/24/18 07:46	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 07:46	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 07:46	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/24/18 07:46	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 07:46	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/24/18 07:46	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/24/18 07:46	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/24/18 07:46	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 07:46	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 07:46	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/24/18 07:46	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/24/18 07:46	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 07:46	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 07:46	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/24/18 07:46	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/24/18 07:46	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/24/18 07:46	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/24/18 07:46	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/24/18 07:46	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 07:46	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/24/18 07:46	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/24/18 07:46	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/24/18 07:46	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/24/18 07:46	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/24/18 07:46	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 07:46	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 07:46	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		03/24/18 07:46	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/24/18 07:46	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/24/18 07:46	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/24/18 07:46	75-15-0	
Carbon tetrachloride	**33.6**	ug/L	1.0	0.20	1		03/24/18 07:46	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/24/18 07:46	75-00-3	
Chloroform	**1.7**	ug/L	1.0	0.46	1		03/24/18 07:46	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/24/18 07:46	74-87-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Sample: Primary School Well-GW-031518 **Lab ID: 10424013014** Collected: 03/15/18 09:00 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/24/18 07:46	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/24/18 07:46	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 07:46	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/24/18 07:46	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/24/18 07:46	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/24/18 07:46	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/24/18 07:46	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 07:46	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/24/18 07:46	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/24/18 07:46	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/24/18 07:46	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/24/18 07:46	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/24/18 07:46	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/24/18 07:46	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 07:46	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 07:46	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/24/18 07:46	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 07:46	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 07:46	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/24/18 07:46	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 07:46	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/24/18 07:46	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/24/18 07:46	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/24/18 07:46	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 07:46	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 07:46	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/24/18 07:46	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/24/18 07:46	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/24/18 07:46	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/24/18 07:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

QC Batch: 528473 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424013001, 10424013002, 10424013003, 10424013004

METHOD BLANK: 2868172 Matrix: Water
Associated Lab Samples: 10424013001, 10424013002, 10424013003, 10424013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	03/21/18 23:04	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/21/18 23:04	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/21/18 23:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/21/18 23:04	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/21/18 23:04	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/21/18 23:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/21/18 23:04	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/21/18 23:04	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/21/18 23:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/21/18 23:04	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/21/18 23:04	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/21/18 23:04	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/21/18 23:04	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/21/18 23:04	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/21/18 23:04	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/21/18 23:04	
Acetone	ug/L	<8.8	20.0	8.8	03/21/18 23:04	
Acrolein	ug/L	<4.8	10.0	4.8	03/21/18 23:04	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/21/18 23:04	
Benzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
Bromoform	ug/L	<1.0	4.0	1.0	03/21/18 23:04	
Bromomethane	ug/L	<1.5	4.0	1.5	03/21/18 23:04	CL
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/21/18 23:04	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/21/18 23:04	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

METHOD BLANK: 2868172 Matrix: Water
Associated Lab Samples: 10424013001, 10424013002, 10424013003, 10424013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Chloroethane	ug/L	<0.44	1.0	0.44	03/21/18 23:04	
Chloroform	ug/L	<0.46	1.0	0.46	03/21/18 23:04	
Chloromethane	ug/L	<1.1	4.0	1.1	03/21/18 23:04	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/21/18 23:04	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/21/18 23:04	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/21/18 23:04	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/21/18 23:04	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/21/18 23:04	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/21/18 23:04	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/21/18 23:04	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/21/18 23:04	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/21/18 23:04	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Naphthalene	ug/L	<0.42	1.0	0.42	03/21/18 23:04	
o-Xylene	ug/L	<0.11	0.50	0.11	03/21/18 23:04	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
Styrene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/21/18 23:04	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/21/18 23:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/18 23:04	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/21/18 23:04	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/21/18 23:04	
Toluene	ug/L	<0.17	0.50	0.17	03/21/18 23:04	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/21/18 23:04	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/21/18 23:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/21/18 23:04	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/21/18 23:04	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/21/18 23:04	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/21/18 23:04	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/21/18 23:04	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/21/18 23:04	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		03/21/18 23:04	
4-Bromofluorobenzene (S)	%.	101	75-125		03/21/18 23:04	
Toluene-d8 (S)	%.	104	75-125		03/21/18 23:04	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	20.4	102	102	75-125	0	30	
1,1,1-Trichloroethane	ug/L	20	20.0	19.2	100	96	75-125	4	30	
1,1,2,2-Tetrachloroethane	ug/L	20	22.1	21.7	111	108	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	21.7	20.9	108	104	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.5	20.3	108	101	72-125	6	30	
1,1-Dichloroethane	ug/L	20	20.2	19.8	101	99	75-125	2	30	
1,1-Dichloroethene	ug/L	20	20.1	19.0	101	95	73-125	6	30	
1,1-Dichloropropene	ug/L	20	20.5	19.6	102	98	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	21.6	21.6	108	108	72-130	0	30	
1,2,3-Trichloropropane	ug/L	20	22.1	21.1	110	105	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	20	22.2	22.2	111	111	75-125	0	30	
1,2,4-Trimethylbenzene	ug/L	20	21.3	20.8	107	104	75-125	3	30	
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	53.1	106	106	64-133	0	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	21.1	109	105	75-125	3	30	
1,2-Dichlorobenzene	ug/L	20	21.2	20.9	106	104	75-125	2	30	
1,2-Dichloroethane	ug/L	20	19.7	19.6	98	98	75-125	0	30	
1,2-Dichloroethene (Total)	ug/L	40	40.0	39.4	100	98	75-125	1	30	
1,2-Dichloropropane	ug/L	20	19.1	19.2	96	96	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	20	21.3	20.6	106	103	75-125	3	30	
1,3-Dichlorobenzene	ug/L	20	21.9	21.5	109	108	75-125	2	30	
1,3-Dichloropropane	ug/L	20	20.8	19.9	104	100	75-125	5	30	
1,4-Dichlorobenzene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	427	393	107	98	75-125	8	30	
2,2,4-Trimethylpentane	ug/L	20	21.6	20.3	108	102	64-130	6	30	
2,2-Dichloropropane	ug/L	20	19.8	19.6	99	98	68-129	1	30	
2-Butanone (MEK)	ug/L	100	94.3	91.5	94	91	65-126	3	30	
2-Chlorotoluene	ug/L	20	20.5	19.8	102	99	75-125	3	30	
2-Hexanone	ug/L	100	108	105	108	105	75-134	3	30	
4-Chlorotoluene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	101	105	101	75-131	4	30	
Acetone	ug/L	100	127	109	127	109	68-150	15	30	
Acrolein	ug/L	200	205	198	103	99	63-149	3	30	
Acrylonitrile	ug/L	200	192	186	96	93	75-125	3	30	
Benzene	ug/L	20	19.7	19.4	98	97	75-125	1	30	
Bromobenzene	ug/L	20	21.9	21.6	109	108	75-125	1	30	
Bromochloromethane	ug/L	20	20.2	19.5	101	97	75-125	4	30	
Bromodichloromethane	ug/L	20	19.0	18.9	95	95	75-125	0	30	
Bromoform	ug/L	20	19.7	19.2	99	96	70-125	3	30	
Bromomethane	ug/L	20	6.3	7.9	32	40	30-145	23	30	CL
Carbon disulfide	ug/L	20	19.1	18.3	95	91	67-125	4	30	
Carbon tetrachloride	ug/L	20	19.9	19.5	100	98	75-125	2	30	
Chlorobenzene	ug/L	20	20.3	19.9	101	100	75-125	2	30	
Chloroethane	ug/L	20	19.1	19.4	95	97	73-131	2	30	
Chloroform	ug/L	20	19.2	18.7	96	93	75-125	3	30	
Chloromethane	ug/L	20	14.6	14.3	73	72	52-132	1	30	
cis-1,2-Dichloroethene	ug/L	20	19.9	19.9	99	100	75-125	0	30	
cis-1,3-Dichloropropene	ug/L	20	18.3	18.6	92	93	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE & LCSD: 2868173 2868192

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	21.0	20.5	105	102	75-125	2	30	
Dibromomethane	ug/L	20	20.0	19.9	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	20	19.2	19.0	96	95	64-127	1	30	
Dichlorofluoromethane	ug/L	20	18.9	19.0	94	95	75-125	1	30	
Diisopropyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Ethyl-tert-butyl ether	ug/L	20	19.7	19.4	99	97	75-125	1	30	
Ethylbenzene	ug/L	20	21.0	20.1	105	100	75-125	4	30	
Hexachloro-1,3-butadiene	ug/L	20	21.3	21.8	107	109	75-130	2	30	
Isopropylbenzene (Cumene)	ug/L	20	20.8	20.4	104	102	75-125	2	30	
m&p-Xylene	ug/L	40	43.5	42.5	109	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	20	19.5	19.2	98	96	75-125	2	30	
Methylene Chloride	ug/L	20	19.7	19.4	99	97	72-125	2	30	
n-Butylbenzene	ug/L	20	21.2	21.1	106	105	75-125	1	30	
n-Propylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Naphthalene	ug/L	20	21.0	21.1	105	105	61-136	0	30	
o-Xylene	ug/L	20	21.4	20.8	107	104	75-125	3	30	
p-Isopropyltoluene	ug/L	20	21.3	21.0	107	105	75-125	1	30	
sec-Butylbenzene	ug/L	20	20.6	20.6	103	103	75-125	0	30	
Styrene	ug/L	20	21.7	20.9	108	104	75-125	4	30	
tert-Amylmethyl ether	ug/L	20	19.5	18.8	98	94	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	221	223	110	112	75-125	1	30	
tert-Butylbenzene	ug/L	20	21.1	20.4	105	102	75-125	3	30	
Tetrachloroethene	ug/L	20	20.7	20.0	104	100	75-125	4	30	
Tetrahydrofuran	ug/L	200	272	246	136	123	64-150	10	30	
Toluene	ug/L	20	20.0	19.6	100	98	75-125	2	30	
trans-1,2-Dichloroethene	ug/L	20	20.1	19.5	101	97	75-125	3	30	
trans-1,3-Dichloropropene	ug/L	20	20.4	20.4	102	102	75-125	0	30	
trans-1,4-Dichloro-2-butene	ug/L	50	47.2	46.6	94	93	57-126	1	30	
Trichloroethene	ug/L	20	20.1	19.5	100	97	75-125	3	30	
Trichlorofluoromethane	ug/L	20	20.1	20.5	101	102	74-126	2	30	
Vinyl acetate	ug/L	20	20.4	20.5	102	102	72-129	0	30	
Vinyl chloride	ug/L	20	18.3	18.4	91	92	71-130	1	30	
Xylene (Total)	ug/L	60	64.9	63.3	108	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.				107	104	75-125			
4-Bromofluorobenzene (S)	%.				100	99	75-125			
Toluene-d8 (S)	%.				105	105	75-125			

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	<0.15	20	21.1	106	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	22.2	111	75-125	
1,1,2-Trichloroethane	ug/L	<0.22	20	21.1	105	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	22.8	114	75-136	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	20.5	102	75-125	
1,1-Dichloroethene	ug/L	<0.18	20	21.0	105	75-127	
1,1-Dichloropropene	ug/L	<0.18	20	21.5	108	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	23.0	115	72-137	
1,2,3-Trichloropropane	ug/L	<0.66	20	21.4	107	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	23.1	116	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	22.3	111	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	55.5	111	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	21.5	107	75-125	
1,2-Dichlorobenzene	ug/L	<0.21	20	22.0	110	75-125	
1,2-Dichloroethane	ug/L	<0.15	20	19.4	97	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	<0.62	20	19.3	97	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	21.8	109	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	22.2	111	75-125	
1,3-Dichloropropane	ug/L	<0.13	20	19.9	99	75-125	
1,4-Dichlorobenzene	ug/L	<0.10	20	21.8	109	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	377	94	67-128	
2,2,4-Trimethylpentane	ug/L	<1.3	20	22.9	114	65-150	
2,2-Dichloropropane	ug/L	<0.40	20	20.8	104	65-136	
2-Butanone (MEK)	ug/L	<2.4	100	89.0	89	59-125	
2-Chlorotoluene	ug/L	<0.20	20	21.4	107	73-126	
2-Hexanone	ug/L	<2.5	100	104	104	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.5	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	102	102	73-125	
Acetone	ug/L	<8.8	100	129	129	75-150	
Acrolein	ug/L	<4.8	200	190	95	53-150	
Acrylonitrile	ug/L	<4.9	200	184	92	69-127	
Benzene	ug/L	<0.13	20	20.3	101	74-125	
Bromobenzene	ug/L	<0.16	20	22.3	111	75-125	
Bromochloromethane	ug/L	<0.38	20	20.3	101	75-125	
Bromodichloromethane	ug/L	<0.20	20	19.5	97	75-125	
Bromoform	ug/L	<1.0	20	20.1	101	68-125	
Bromomethane	ug/L	<1.5	20	9.3	47	37-149	CL
Carbon disulfide	ug/L	<0.37	20	20.0	99	66-139	
Carbon tetrachloride	ug/L	99.5	20	121	106	75-127	
Chlorobenzene	ug/L	<0.14	20	20.7	104	75-125	
Chloroethane	ug/L	<0.44	20	19.0	95	73-134	
Chloroform	ug/L	7.5	20	26.6	96	71-125	
Chloromethane	ug/L	<1.1	20	14.0	70	58-133	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20.7	104	75-125	
cis-1,3-Dichloropropene	ug/L	<0.12	20	18.6	93	71-125	
Dibromochloromethane	ug/L	<0.13	20	21.2	106	75-125	
Dibromomethane	ug/L	<0.50	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	<0.31	20	19.9	100	70-150	
Dichlorofluoromethane	ug/L	<0.38	20	19.1	95	75-126	
Diisopropyl ether	ug/L	<0.12	20	19.5	97	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE SAMPLE: 2868194

Parameter	Units	10424340004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	19.7	98	74-125	
Ethylbenzene	ug/L	<0.14	20	21.1	105	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	24.5	123	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	21.5	108	75-125	
m&p-Xylene	ug/L	<0.24	40	44.3	111	75-125	
Methyl-tert-butyl ether	ug/L	<0.14	20	19.4	97	75-125	
Methylene Chloride	ug/L	<1.2	20	20.0	100	72-125	
n-Butylbenzene	ug/L	<0.13	20	23.2	116	73-140	
n-Propylbenzene	ug/L	<0.12	20	22.6	113	75-126	
Naphthalene	ug/L	<0.42	20	21.5	108	61-136	
o-Xylene	ug/L	<0.11	20	21.4	107	75-125	
p-Isopropyltoluene	ug/L	<0.14	20	22.3	111	73-133	
sec-Butylbenzene	ug/L	<0.12	20	22.1	111	75-132	
Styrene	ug/L	<0.14	20	20.6	103	71-125	
tert-Amylmethyl ether	ug/L	<0.12	20	19.0	95	71-125	
tert-Butyl Alcohol	ug/L	<2.2	200	230	115	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.2	111	75-126	
Tetrachloroethene	ug/L	<0.16	20	21.9	110	75-125	
Tetrahydrofuran	ug/L	<4.3	200	291	145	75-150	
Toluene	ug/L	<0.17	20	20.2	101	74-125	
trans-1,2-Dichloroethene	ug/L	<0.21	20	21.0	105	75-125	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20.7	103	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	48.0	96	57-125	
Trichloroethene	ug/L	<0.18	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.13	20	20.8	104	75-135	
Vinyl acetate	ug/L	<1.5	20	19.8	99	57-136	
Vinyl chloride	ug/L	<0.096	20	19.2	96	74-141	
Xylene (Total)	ug/L	<0.24	60	65.8	110	75-125	
1,2-Dichloroethane-d4 (S)	%.				103	75-125	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				105	75-125	

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	CL
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	<0.20	<0.20		30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

SAMPLE DUPLICATE: 2868193

Parameter	Units	10424340005 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	106	105	2		
4-Bromofluorobenzene (S)	%.	101	102	0		
Toluene-d8 (S)	%.	105	102	2		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

QC Batch: 528793 — Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B — Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424013007, 10424013009, 10424013012, 10424013014

METHOD BLANK: 2869762 — Matrix: Water
Associated Lab Samples: 10424013007, 10424013009, 10424013012, 10424013014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/24/18 02:38	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/24/18 02:38	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/24/18 02:38	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1-Dichloroethene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,1-Dichloropropene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/24/18 02:38	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/24/18 02:38	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/24/18 02:38	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/24/18 02:38	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/24/18 02:38	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/24/18 02:38	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/24/18 02:38	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/24/18 02:38	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/24/18 02:38	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/24/18 02:38	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/24/18 02:38	
Acetone	ug/L	<8.8	20.0	8.8	03/24/18 02:38	
Acrolein	ug/L	<4.8	10.0	4.8	03/24/18 02:38	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/24/18 02:38	
Benzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Bromodichloromethane	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN
Bromoform	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
Bromomethane	ug/L	<1.5	4.0	1.5	03/24/18 02:38	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/24/18 02:38	
Carbon tetrachloride	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

METHOD BLANK: 2869762 Matrix: Water

Associated Lab Samples: 10424013007, 10424013009, 10424013012, 10424013014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Chloroethane	ug/L	<0.44	1.0	0.44	03/24/18 02:38	
Chloroform	ug/L	<0.46	1.0	0.46	03/24/18 02:38	
Chloromethane	ug/L	<1.1	4.0	1.1	03/24/18 02:38	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Dibromomethane	ug/L	<0.50	1.0	0.50	03/24/18 02:38	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/24/18 02:38	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/24/18 02:38	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/24/18 02:38	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/24/18 02:38	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/24/18 02:38	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Naphthalene	ug/L	<0.42	1.0	0.42	03/24/18 02:38	
o-Xylene	ug/L	<0.11	0.50	0.11	03/24/18 02:38	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Styrene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/24/18 02:38	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/24/18 02:38	
Toluene	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/24/18 02:38	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/24/18 02:38	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/24/18 02:38	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/24/18 02:38	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/24/18 02:38	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/24/18 02:38	
4-Bromofluorobenzene (S)	%.	99	75-125		03/24/18 02:38	
Toluene-d8 (S)	%.	98	75-125		03/24/18 02:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	98	75-125	
1,1,2-Trichloroethane	ug/L	20	21.7	109	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	20.9	104	75-125	
1,1-Dichloroethene	ug/L	20	19.5	97	73-125	
1,1-Dichloropropene	ug/L	20	20.7	104	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.2	96	72-130	
1,2,3-Trichloropropane	ug/L	20	20.1	101	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.7	99	75-125	
1,2-Dichlorobenzene	ug/L	20	20.9	105	75-125	
1,2-Dichloroethane	ug/L	20	19.6	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.3	103	75-125	
1,2-Dichloropropane	ug/L	20	21.5	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,3-Dichlorobenzene	ug/L	20	20.3	102	75-125	
1,3-Dichloropropane	ug/L	20	21.3	107	75-125	
1,4-Dichlorobenzene	ug/L	20	20.8	104	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	416	104	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.4	97	64-130	
2,2-Dichloropropane	ug/L	20	17.7	89	68-129	
2-Butanone (MEK)	ug/L	100	104	104	65-126	
2-Chlorotoluene	ug/L	20	19.6	98	75-125	
2-Hexanone	ug/L	100	111	111	75-134	
4-Chlorotoluene	ug/L	20	20.8	104	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	75-131	
Acetone	ug/L	100	125	125	68-150	
Acrolein	ug/L	200	210	105	63-149	
Acrylonitrile	ug/L	200	211	106	75-125	
Benzene	ug/L	20	20.2	101	75-125	
Bromobenzene	ug/L	20	20.8	104	75-125	
Bromochloromethane	ug/L	20	20.6	103	75-125	
Bromodichloromethane	ug/L	20	20.8	104	75-125	
Bromoform	ug/L	20	21.2	106	70-125	
Bromomethane	ug/L	20	17.0	85	30-145	
Carbon disulfide	ug/L	20	20.5	102	67-125	
Carbon tetrachloride	ug/L	20	19.4	97	75-125	
Chlorobenzene	ug/L	20	21.0	105	75-125	
Chloroethane	ug/L	20	19.9	100	73-131	
Chloroform	ug/L	20	20.1	100	75-125	
Chloromethane	ug/L	20	20.0	100	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.8	104	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	106	75-125	
Dibromomethane	ug/L	20	20.9	104	75-125	
Dichlorodifluoromethane	ug/L	20	19.7	99	64-127	
Dichlorofluoromethane	ug/L	20	19.3	96	75-125	
Diisopropyl ether	ug/L	20	20.4	102	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.9	105	75-125	
Ethylbenzene	ug/L	20	20.7	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.2	96	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.5	102	72-125	
n-Butylbenzene	ug/L	20	20.5	102	75-125	
n-Propylbenzene	ug/L	20	20.5	103	75-125	
Naphthalene	ug/L	20	19.0	95	61-136	
o-Xylene	ug/L	20	21.0	105	75-125	
p-Isopropyltoluene	ug/L	20	20.8	104	75-125	
sec-Butylbenzene	ug/L	20	20.7	104	75-125	
Styrene	ug/L	20	20.9	105	75-125	
tert-Amylmethyl ether	ug/L	20	20.7	104	75-125	
tert-Butyl Alcohol	ug/L	200	212	106	75-125	
tert-Butylbenzene	ug/L	20	20.4	102	75-125	
Tetrachloroethene	ug/L	20	21.2	106	75-125	
Tetrahydrofuran	ug/L	200	277	139	64-150	
Toluene	ug/L	20	20.5	103	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.5	103	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.9	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	45.9	92	57-126	
Trichloroethene	ug/L	20	20.9	104	75-125	
Trichlorofluoromethane	ug/L	20	19.8	99	74-126	
Vinyl acetate	ug/L	20	19.4	97	72-129	
Vinyl chloride	ug/L	20	20.9	104	71-130	
Xylene (Total)	ug/L	60	63.3	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	21.2	20.9	106	104	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	21.3	21.3	107	106	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	18.7	18.8	94	94	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	20.8	20.2	104	101	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	22.2	22.1	111	111	75-136	0	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	20.6	20.8	102	103	75-125	1	30	
1,1-Dichloroethene	ug/L	<1.0	20	20	19.9	20.1	99	100	75-127	1	30	
1,1-Dichloropropene	ug/L	<1.0	20	20	21.3	21.2	107	106	75-129	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	18.8	19.1	94	96	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	19.3	17.9	97	90	75-125	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	18.9	18.9	94	94	69-131	0	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.3	103	102	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	50.0	51.0	100	102	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.1	18.5	96	93	75-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.2	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	18.8	18.9	94	95	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	41.9	41.7	104	104	75-125	1	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	20.9	20.3	105	102	75-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.3	101	102	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	20.8	20.5	104	102	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	20.4	20.3	102	102	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	419	424	105	106	67-128	1	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	20.0	20.0	100	100	65-150	0	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	18.1	17.8	91	89	65-136	2	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	87.5	88.7	87	89	59-125	1	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.7	19.4	98	97	73-126	1	30	
2-Hexanone	ug/L	<5.0	100	100	102	98.9	102	99	68-138	3	30	
4-Chlorotoluene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	99.4	95.7	99	96	73-125	4	30	
Acetone	ug/L	<20.0	100	100	130	128	130	128	75-150	1	30	
Acrolein	ug/L	<10.0	200	200	190	185	95	93	53-150	3	30	
Acrylonitrile	ug/L	<10.0	200	200	191	187	95	93	69-127	2	30	
Benzene	ug/L	<0.50	20	20	19.7	19.7	98	99	74-125	0	30	
Bromobenzene	ug/L	<0.50	20	20	20.3	20.1	102	100	75-125	1	30	
Bromochloromethane	ug/L	<1.0	20	20	19.7	19.7	99	98	75-125	0	30	
Bromodichloromethane	ug/L	<1.0	20	20	20.5	20.3	103	101	75-125	1	30	
Bromoform	ug/L	<4.0	20	20	20.9	20.9	104	104	68-125	0	30	
Bromomethane	ug/L	<4.0	20	20	17.9	18.9	89	95	37-149	6	30	
Carbon disulfide	ug/L	<1.0	20	20	21.2	21.2	106	106	66-139	0	30	
Carbon tetrachloride	ug/L	<1.0	20	20	20.1	20.6	100	103	75-127	3	30	
Chlorobenzene	ug/L	<0.50	20	20	21.0	21.0	105	105	75-125	0	30	
Chloroethane	ug/L	<1.0	20	20	18.9	18.9	94	95	73-134	0	30	
Chloroform	ug/L	<1.0	20	20	19.4	19.5	97	98	71-125	0	30	
Chloromethane	ug/L	<4.0	20	20	19.5	19.9	97	100	58-133	2	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	20.7	20.6	102	102	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	19.6	19.2	98	96	71-125	2	30	
Dibromochloromethane	ug/L	<0.50	20	20	21.0	20.8	105	104	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	20.1	19.8	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	19.1	19.4	96	97	70-150	2	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	18.0	18.1	90	90	75-126	1	30	
Diisopropyl ether	ug/L	<1.0	20	20	19.3	19.4	96	97	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	19.8	19.7	99	98	74-125	1	30	
Ethylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	20.3	22.2	102	111	60-150	9	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	21.5	21.0	108	105	75-125	2	30	
m&p-Xylene	ug/L	<1.0	40	40	43.2	42.4	108	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	19.1	19.2	96	96	75-125	0	30	
Methylene Chloride	ug/L	<4.0	20	20	19.4	19.4	97	97	72-125	0	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.6	21.0	103	105	73-140	2	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-126	1	30	
Naphthalene	ug/L	<1.0	20	20	18.5	18.1	92	91	61-136	2	30	
o-Xylene	ug/L	<0.50	20	20	21.1	20.5	106	103	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	20.7	20.8	103	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.50	20	20	21.3	21.2	107	106	75-132	1	30	
Styrene	ug/L	<0.50	20	20	21.1	20.6	105	103	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	19.5	19.3	98	96	71-125	1	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	214	192	107	96	72-130	11	30	
tert-Butylbenzene	ug/L	<0.50	20	20	20.4	20.6	102	103	75-126	1	30	
Tetrachloroethene	ug/L	<0.50	20	20	21.9	21.2	110	106	75-125	3	30	
Tetrahydrofuran	ug/L	<10.0	200	200	290	286	145	143	75-150	2	30	
Toluene	ug/L	<0.50	20	20	20.6	20.1	103	100	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	21.2	21.1	106	106	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	20.6	20.4	103	102	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	42.8	42.7	86	85	57-125	0	30	
Trichloroethene	ug/L	6.3	20	20	26.8	26.7	103	102	75-125	1	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	19.1	19.4	95	97	75-135	2	30	
Vinyl acetate	ug/L	<10.0	20	20	17.1	16.8	86	84	57-136	2	30	
Vinyl chloride	ug/L	ND	20	20	20.3	20.6	102	103	74-141	1	30	
Xylene (Total)	ug/L	<1.5	60	60	64.4	62.9	107	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						98	100	75-125			
4-Bromofluorobenzene (S)	%.						100	100	75-125			
Toluene-d8 (S)	%.						100	101	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

QC Batch:	529717	Analysis Method:	EPA 8260B
QC Batch Method:	EPA 8260B	Analysis Description:	8260 MSV LL Water

Associated Lab Samples: 10424013005, 10424013006, 10424013008, 10424013010, 10424013011, 10424013013

METHOD BLANK: 2875108 Matrix: Water

Associated Lab Samples: 10424013005, 10424013006, 10424013008, 10424013010, 10424013011, 10424013013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/29/18 23:21	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/29/18 23:21	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/29/18 23:21	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/29/18 23:21	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/29/18 23:21	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/29/18 23:21	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/29/18 23:21	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/29/18 23:21	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/29/18 23:21	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/29/18 23:21	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/29/18 23:21	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/29/18 23:21	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/29/18 23:21	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/29/18 23:21	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/29/18 23:21	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/29/18 23:21	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/29/18 23:21	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/29/18 23:21	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/29/18 23:21	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/29/18 23:21	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/29/18 23:21	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/29/18 23:21	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/29/18 23:21	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/29/18 23:21	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/29/18 23:21	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/29/18 23:21	
Acetone	ug/L	<8.8	20.0	8.8	03/29/18 23:21	
Acrolein	ug/L	<4.8	10.0	4.8	03/29/18 23:21	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/29/18 23:21	
Benzene	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/29/18 23:21	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/29/18 23:21	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/29/18 23:21	
Bromoform	ug/L	<1.0	4.0	1.0	03/29/18 23:21	
Bromomethane	ug/L	<1.5	4.0	1.5	03/29/18 23:21	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/29/18 23:21	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/29/18 23:21	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

METHOD BLANK: 2875108 Matrix: Water

Associated Lab Samples: 10424013005, 10424013006, 10424013008, 10424013010, 10424013011, 10424013013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
Chloroethane	ug/L	<0.44	1.0	0.44	03/29/18 23:21	
Chloroform	ug/L	<0.46	1.0	0.46	03/29/18 23:21	
Chloromethane	ug/L	<1.1	4.0	1.1	03/29/18 23:21	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/29/18 23:21	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/29/18 23:21	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/29/18 23:21	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/29/18 23:21	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/29/18 23:21	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/29/18 23:21	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/29/18 23:21	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/29/18 23:21	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/29/18 23:21	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/29/18 23:21	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/29/18 23:21	
Naphthalene	ug/L	<0.42	1.0	0.42	03/29/18 23:21	
o-Xylene	ug/L	<0.11	0.50	0.11	03/29/18 23:21	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/29/18 23:21	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/29/18 23:21	
Styrene	ug/L	<0.14	1.0	0.14	03/29/18 23:21	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/29/18 23:21	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/29/18 23:21	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/29/18 23:21	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/29/18 23:21	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/29/18 23:21	
Toluene	ug/L	<0.17	0.50	0.17	03/29/18 23:21	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/29/18 23:21	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/29/18 23:21	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/29/18 23:21	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/29/18 23:21	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/29/18 23:21	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/29/18 23:21	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/29/18 23:21	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/29/18 23:21	
1,2-Dichloroethane-d4 (S)	%.	97	75-125		03/29/18 23:21	
4-Bromofluorobenzene (S)	%.	98	75-125		03/29/18 23:21	
Toluene-d8 (S)	%.	99	75-125		03/29/18 23:21	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE & LCSD: 2875109 2875652

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.7	20.1	104	101	75-125	3	30	
1,1,1-Trichloroethane	ug/L	20	20.8	19.8	104	99	75-125	5	30	
1,1,2,2-Tetrachloroethane	ug/L	20	19.8	20.3	99	101	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	20.1	19.7	101	98	75-125	2	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.8	19.4	104	97	72-125	7	30	
1,1-Dichloroethane	ug/L	20	21.5	20.4	108	102	75-125	5	30	
1,1-Dichloroethene	ug/L	20	21.1	19.8	105	99	73-125	6	30	
1,1-Dichloropropene	ug/L	20	21.0	19.8	105	99	73-125	6	30	
1,2,3-Trichlorobenzene	ug/L	20	19.8	20.3	99	101	72-130	2	30	
1,2,3-Trichloropropane	ug/L	20	18.9	19.0	95	95	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	20	19.5	19.9	97	99	75-125	2	30	
1,2,4-Trimethylbenzene	ug/L	20	19.7	19.4	98	97	75-125	1	30	
1,2-Dibromo-3-chloropropane	ug/L	50	51.2	54.0	102	108	64-133	5	30	
1,2-Dibromoethane (EDB)	ug/L	20	19.7	19.4	99	97	75-125	2	30	
1,2-Dichlorobenzene	ug/L	20	20.0	19.8	100	99	75-125	1	30	
1,2-Dichloroethane	ug/L	20	19.5	19.0	98	95	75-125	3	30	
1,2-Dichloroethene (Total)	ug/L	40	40.4	38.5	101	96	75-125	5	30	
1,2-Dichloropropane	ug/L	20	20.6	19.7	103	99	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	20	21.0	20.4	105	102	75-125	3	30	
1,3-Dichlorobenzene	ug/L	20	21.2	20.9	106	105	75-125	1	30	
1,3-Dichloropropane	ug/L	20	21.4	20.7	107	103	75-125	3	30	
1,4-Dichlorobenzene	ug/L	20	21.3	21.3	106	107	75-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	382	393	96	98	75-125	3	30	
2,2,4-Trimethylpentane	ug/L	20	19.3	18.4	96	92	64-130	5	30	
2,2-Dichloropropane	ug/L	20	19.3	18.4	97	92	68-129	5	30	
2-Butanone (MEK)	ug/L	100	97.3	103	97	103	65-126	6	30	
2-Chlorotoluene	ug/L	20	20.6	20.2	103	101	75-125	2	30	
2-Hexanone	ug/L	100	95.5	99.2	96	99	75-134	4	30	
4-Chlorotoluene	ug/L	20	21.4	21.0	107	105	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	109	106	109	75-131	2	30	
Acetone	ug/L	100	102	105	102	105	68-150	2	30	
Acrolein	ug/L	200	213	217	106	108	63-149	2	30	
Acrylonitrile	ug/L	200	200	205	100	103	75-125	2	30	
Benzene	ug/L	20	20.6	19.5	103	98	75-125	5	30	
Bromobenzene	ug/L	20	19.6	19.5	98	97	75-125	1	30	
Bromochloromethane	ug/L	20	21.0	20.3	105	101	75-125	3	30	
Bromodichloromethane	ug/L	20	20.4	19.9	102	99	75-125	3	30	
Bromoform	ug/L	20	18.1	18.2	91	91	70-125	1	30	
Bromomethane	ug/L	20	23.3	22.2	116	111	30-145	5	30	
Carbon disulfide	ug/L	20	18.9	18.1	95	91	67-125	4	30	
Carbon tetrachloride	ug/L	20	21.1	19.9	105	100	75-125	6	30	
Chlorobenzene	ug/L	20	20.8	20.0	104	100	75-125	4	30	
Chloroethane	ug/L	20	21.7	20.6	108	103	73-131	5	30	
Chloroform	ug/L	20	20.0	19.3	100	96	75-125	4	30	
Chloromethane	ug/L	20	19.3	18.7	96	93	52-132	3	30	
cis-1,2-Dichloroethene	ug/L	20	20.9	19.9	105	99	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	20	19.5	18.9	98	94	75-125	3	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

LABORATORY CONTROL SAMPLE & LCSD: 2875109 2875652

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	19.5	19.3	98	97	75-125	1	30	
Dibromomethane	ug/L	20	20.1	19.4	101	97	75-125	4	30	
Dichlorodifluoromethane	ug/L	20	20.2	19.0	101	95	64-127	6	30	
Dichlorofluoromethane	ug/L	20	21.5	20.1	108	101	75-125	7	30	
Diisopropyl ether	ug/L	20	21.0	20.3	105	101	75-125	3	30	
Ethyl-tert-butyl ether	ug/L	20	20.2	20.0	101	100	75-125	1	30	
Ethylbenzene	ug/L	20	21.4	20.5	107	102	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	20	20.0	20.0	100	100	75-130	0	30	
Isopropylbenzene (Cumene)	ug/L	20	20.1	19.3	100	97	75-125	4	30	
m&p-Xylene	ug/L	40	43.6	41.2	109	103	75-125	6	30	
Methyl-tert-butyl ether	ug/L	20	21.1	21.0	105	105	75-125	0	30	
Methylene Chloride	ug/L	20	19.9	18.8	99	94	72-125	5	30	
n-Butylbenzene	ug/L	20	19.9	19.4	99	97	75-125	2	30	
n-Propylbenzene	ug/L	20	19.9	19.4	100	97	75-125	3	30	
Naphthalene	ug/L	20	18.8	20.1	94	100	61-136	6	30	
o-Xylene	ug/L	20	21.5	20.7	107	104	75-125	4	30	
p-Isopropyltoluene	ug/L	20	19.5	18.8	97	94	75-125	3	30	
sec-Butylbenzene	ug/L	20	21.6	20.8	108	104	75-125	4	30	
Styrene	ug/L	20	19.8	18.7	99	94	75-125	6	30	
tert-Amylmethyl ether	ug/L	20	20.5	20.3	103	102	75-125	1	30	
tert-Butyl Alcohol	ug/L	200	204	207	102	103	75-125	1	30	
tert-Butylbenzene	ug/L	20	21.1	20.4	106	102	75-125	3	30	
Tetrachloroethene	ug/L	20	20.1	19.0	101	95	75-125	6	30	
Tetrahydrofuran	ug/L	200	216	222	108	111	64-150	3	30	
Toluene	ug/L	20	20.8	19.8	104	99	75-125	5	30	
trans-1,2-Dichloroethene	ug/L	20	19.5	18.6	98	93	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	20	19.4	18.7	97	94	75-125	3	30	
trans-1,4-Dichloro-2-butene	ug/L	50	43.5	44.7	87	89	57-126	3	30	
Trichloroethene	ug/L	20	21.8	20.9	109	104	75-125	4	30	
Trichlorofluoromethane	ug/L	20	23.0	21.7	115	108	74-126	6	30	
Vinyl acetate	ug/L	20	18.2	18.2	91	91	72-129	0	30	
Vinyl chloride	ug/L	20	21.8	20.4	109	102	71-130	7	30	
Xylene (Total)	ug/L	60	65.1	61.9	108	103	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.				98	99	75-125			
4-Bromofluorobenzene (S)	%.				99	100	75-125			
Toluene-d8 (S)	%.				100	99	75-125			

MATRIX SPIKE SAMPLE: 2875653

Parameter	Units	10425381001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	21.7	109	75-125	
1,1,1-Trichloroethane	ug/L	<0.15	20	22.2	111	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20.7	104	75-125	
1,1,2-Trichloroethane	ug/L	<0.22	20	20.5	102	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	22.7	114	75-136	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE SAMPLE: 2875653

Parameter	Units	10425381001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.14	20	22.7	113	75-125	
1,1-Dichloroethene	ug/L	<0.18	20	23.4	117	75-127	
1,1-Dichloropropene	ug/L	<0.18	20	22.7	113	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20.9	104	72-137	
1,2,3-Trichloropropane	ug/L	<0.66	20	19.6	98	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20.9	104	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	21.1	106	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	53.3	107	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	19.9	100	75-125	
1,2-Dichlorobenzene	ug/L	<0.21	20	21.2	106	75-125	
1,2-Dichloroethane	ug/L	<0.15	20	19.5	98	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	42.4	106	75-125	
1,2-Dichloropropane	ug/L	<0.62	20	21.3	107	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	22.6	113	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	22.8	114	75-125	
1,3-Dichloropropane	ug/L	<0.13	20	21.7	109	75-125	
1,4-Dichlorobenzene	ug/L	<0.10	20	22.8	114	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	401	100	67-128	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20.7	103	65-150	
2,2-Dichloropropane	ug/L	<0.40	20	20.8	104	65-136	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	59-125	
2-Chlorotoluene	ug/L	<0.20	20	22.1	111	73-126	
2-Hexanone	ug/L	<2.5	100	97.8	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.7	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	110	110	73-125	
Acetone	ug/L	<8.8	100	158	158	75-150	M1
Acrolein	ug/L	<4.8	200	216	108	53-150	
Acrylonitrile	ug/L	<4.9	200	206	103	69-127	
Benzene	ug/L	<0.13	20	21.4	107	74-125	
Bromobenzene	ug/L	<0.16	20	21.0	105	75-125	
Bromochloromethane	ug/L	<0.38	20	21.5	108	75-125	
Bromodichloromethane	ug/L	<0.20	20	21.0	105	75-125	
Bromoform	ug/L	<1.0	20	19.0	95	68-125	
Bromomethane	ug/L	<1.5	20	24.0	120	37-149	
Carbon disulfide	ug/L	<0.37	20	20.4	102	66-139	
Carbon tetrachloride	ug/L	<0.20	20	22.7	113	75-127	
Chlorobenzene	ug/L	<0.14	20	21.8	109	75-125	
Chloroethane	ug/L	<0.44	20	22.0	110	73-134	
Chloroform	ug/L	<0.46	20	20.6	103	71-125	
Chloromethane	ug/L	<1.1	20	19.8	99	58-133	
cis-1,2-Dichloroethene	ug/L	<0.20	20	21.8	109	75-125	
cis-1,3-Dichloropropene	ug/L	<0.12	20	19.9	100	71-125	
Dibromochloromethane	ug/L	<0.13	20	20.1	101	75-125	
Dibromomethane	ug/L	<0.50	20	20.4	102	75-125	
Dichlorodifluoromethane	ug/L	<0.31	20	20.8	104	70-150	
Dichlorofluoromethane	ug/L	<0.38	20	21.8	109	75-126	
Diisopropyl ether	ug/L	<0.12	20	21.3	107	66-131	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

MATRIX SPIKE SAMPLE: 2875653

Parameter	Units	10425381001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.13	20	20.6	103	74-125	
Ethylbenzene	ug/L	<0.14	20	22.8	114	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	21.5	108	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	21.6	108	75-125	
m&p-Xylene	ug/L	<0.24	40	46.1	115	75-125	
Methyl-tert-butyl ether	ug/L	<0.14	20	21.5	108	75-125	
Methylene Chloride	ug/L	<1.2	20	20.4	102	72-125	
n-Butylbenzene	ug/L	<0.13	20	21.7	108	73-140	
n-Propylbenzene	ug/L	<0.12	20	21.7	109	75-126	
Naphthalene	ug/L	<0.42	20	20.4	102	61-136	
o-Xylene	ug/L	<0.11	20	22.9	115	75-125	
p-Isopropyltoluene	ug/L	<0.14	20	21.4	107	73-133	
sec-Butylbenzene	ug/L	<0.12	20	23.6	118	75-132	
Styrene	ug/L	<0.14	20	20.4	102	71-125	
tert-Amylmethyl ether	ug/L	<0.12	20	21.3	106	71-125	
tert-Butyl Alcohol	ug/L	<2.2	200	216	108	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.9	114	75-126	
Tetrachloroethene	ug/L	<0.16	20	21.7	108	75-125	
Tetrahydrofuran	ug/L	<4.3	200	347	173	75-150	M1
Toluene	ug/L	<0.17	20	21.7	109	74-125	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20.6	103	75-125	
trans-1,3-Dichloropropene	ug/L	<0.14	20	19.7	98	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	45.4	91	57-125	
Trichloroethene	ug/L	<0.18	20	23.0	115	75-125	
Trichlorofluoromethane	ug/L	<0.13	20	23.6	118	75-135	
Vinyl acetate	ug/L	<1.5	20	17.6	88	57-136	
Vinyl chloride	ug/L	<0.096	20	22.3	111	74-141	
Xylene (Total)	ug/L	<0.24	60	69.1	115	75-125	
1,2-Dichloroethane-d4 (S)	%.				99	75-125	
4-Bromofluorobenzene (S)	%.				100	75-125	
Toluene-d8 (S)	%.				99	75-125	

SAMPLE DUPLICATE: 2875654

Parameter	Units	10425381002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	<0.14		30	
1,1,1-Trichloroethane	ug/L	<0.15	<0.15		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	<0.19		30	
1,1,2-Trichloroethane	ug/L	<0.22	<0.22		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	<0.28		30	
1,1-Dichloroethane	ug/L	<0.14	<0.14		30	
1,1-Dichloroethene	ug/L	<0.18	<0.18		30	
1,1-Dichloropropene	ug/L	<0.18	<0.18		30	
1,2,3-Trichlorobenzene	ug/L	<0.14	<0.14		30	
1,2,3-Trichloropropane	ug/L	<0.66	<0.66		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

SAMPLE DUPLICATE: 2875654

Parameter	Units	10425381002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.18	<0.18		30	
1,2,4-Trimethylbenzene	ug/L	<0.098	<0.098		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<1.0		30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	<0.17		30	
1,2-Dichlorobenzene	ug/L	<0.21	<0.21		30	
1,2-Dichloroethane	ug/L	<0.15	<0.15		30	
1,2-Dichloroethene (Total)	ug/L	<0.41	<0.41		30	
1,2-Dichloropropane	ug/L	<0.62	<0.62		30	
1,3,5-Trimethylbenzene	ug/L	<0.18	<0.18		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.13	<0.13		30	
1,4-Dichlorobenzene	ug/L	<0.10	<0.10		30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	<22.6		30	
2,2,4-Trimethylpentane	ug/L	<1.3	<1.3		30	
2,2-Dichloropropane	ug/L	<0.40	<0.40		30	
2-Butanone (MEK)	ug/L	<2.4	<2.4		30	
2-Chlorotoluene	ug/L	<0.20	<0.20		30	
2-Hexanone	ug/L	<2.5	<2.5		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	<0.55		30	
Acetone	ug/L	<8.8	<8.8		30	
Acrolein	ug/L	<4.8	<4.8		30	
Acrylonitrile	ug/L	<4.9	<4.9		30	
Benzene	ug/L	<0.13	<0.13		30	
Bromobenzene	ug/L	<0.16	<0.16		30	
Bromochloromethane	ug/L	<0.38	<0.38		30	
Bromodichloromethane	ug/L	<0.20	<0.20		30	
Bromoform	ug/L	<1.0	<1.0		30	
Bromomethane	ug/L	<1.5	<1.5		30	
Carbon disulfide	ug/L	<0.37	<0.37		30	
Carbon tetrachloride	ug/L	<0.20	<0.20		30	
Chlorobenzene	ug/L	<0.14	<0.14		30	
Chloroethane	ug/L	<0.44	<0.44		30	
Chloroform	ug/L	<0.46	<0.46		30	
Chloromethane	ug/L	<1.1	<1.1		30	
cis-1,2-Dichloroethene	ug/L	<0.20	<0.20		30	
cis-1,3-Dichloropropene	ug/L	<0.12	<0.12		30	
Dibromochloromethane	ug/L	<0.13	<0.13		30	
Dibromomethane	ug/L	<0.50	<0.50		30	
Dichlorodifluoromethane	ug/L	<0.31	<0.31		30	
Dichlorofluoromethane	ug/L	<0.38	<0.38		30	
Diisopropyl ether	ug/L	<0.12	<0.12		30	
Ethyl-tert-butyl ether	ug/L	<0.13	<0.13		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.48	<0.48		30	
Isopropylbenzene (Cumene)	ug/L	<0.14	<0.14		30	
m&p-Xylene	ug/L	<0.24	<0.24		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

SAMPLE DUPLICATE: 2875654

Parameter	Units	10425381002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.14	<0.14		30	
Methylene Chloride	ug/L	<1.2	<1.2		30	
n-Butylbenzene	ug/L	<0.13	<0.13		30	
n-Propylbenzene	ug/L	<0.12	<0.12		30	
Naphthalene	ug/L	<0.42	<0.42		30	
o-Xylene	ug/L	<0.11	<0.11		30	
p-Isopropyltoluene	ug/L	<0.14	<0.14		30	
sec-Butylbenzene	ug/L	<0.12	<0.12		30	
Styrene	ug/L	<0.14	<0.14		30	
tert-Amylmethyl ether	ug/L	<0.12	<0.12		30	
tert-Butyl Alcohol	ug/L	<2.2	<2.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.16	<0.16		30	
Tetrahydrofuran	ug/L	<4.3	<4.3		30	
Toluene	ug/L	<0.17	<0.17		30	
trans-1,2-Dichloroethene	ug/L	<0.21	<0.21		30	
trans-1,3-Dichloropropene	ug/L	<0.14	<0.14		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	<2.8		30	
Trichloroethene	ug/L	<0.18	<0.18		30	
Trichlorofluoromethane	ug/L	<0.13	<0.13		30	
Vinyl acetate	ug/L	<1.5	<1.5		30	
Vinyl chloride	ug/L	<0.096	<0.096		30	
Xylene (Total)	ug/L	<0.24	<0.24		30	
1,2-Dichloroethane-d4 (S)	%.	99	99	0		
4-Bromofluorobenzene (S)	%.	97	98	2		
Toluene-d8 (S)	%.	98	98	0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical
www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 528473

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 529717

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424013

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424013001	**MarlowWellW20-GW-031518**	EPA 8260B	528473		
10424013002	**MW1D-GW-031518**	EPA 8260B	528473		
10424013003	**MW2D-GW-031518**	EPA 8260B	528473		
10424013004	**MW20D-GW-031518**	EPA 8260B	528473		
10424013005	**MW6S-GW-031618**	EPA 8260B	529717		
10424013006	**MW11S-GW-031618**	EPA 8260B	529717		
10424013007	**MW10S-GW-031618**	EPA 8260B	528793		
10424013008	**MW12S-GW-031618**	EPA 8260B	529717		
10424013009	**MW8S-GW-031618**	EPA 8260B	528793		
10424013010	**MW7S-GW-031618**	EPA 8260B	529717		
10424013011	**MW1S-GW-031618**	EPA 8260B	529717		
10424013012	**MW9S-GW-031618**	EPA 8260B	528793		
10424013013	**Trip Blank**	EPA 8260B	529717		
10424013014	**Primary School Well-GW-031518**	EPA 8260B	528793		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D[ocument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu[st be completed accurately.]

WO#: 10424013

10424013

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500, Spokane, WA 99201	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Email:	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Phone: Fax:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Requested Due Date: ***10 Day Standard***	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals)

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**Nitrate+Nitrite 353.2**	MS/MSD Requested	Pace Project No./ Lab I.D.
1	Marlow WellW20-GW-031518	WT	G	3/15	1015	—	—	—	3				X				X											001
2	MW1D-GW-031518				1205				3				X				X											002
3	MW2D-GW-031518				1440				3				X				X											003
4	MW20D-GW-031518				1600				3				X				X											004
5	MW6S-GW-031618			3/16	830				3				X				X											005
6	MW11S-GW-031618				915				3				X				X											006
7	MW10S-GW-031618				930				3				X				X											007
8	MW12S-GW-031618				1015				3				X				X											008
9	MW8S-GW-031618				1030				3				X				X											009
10	MW10S-GW-031618				1045				3				X				X											010
11	MW1S-GW-031618				1105				3				X				X											011
12	MW9S-GW-031618				1145				3				X				X											012

MW7S per client JMG 032018

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/16/18	1530	[signature] Pace	3-17-18	920	0.5	Y	Y	Y
*Field filtered by client							0.8			
							2.0			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/15/18

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 Of 3

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Trip Blank	WT	–	–	–	–	–	–	2				X				X												013
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/16/18	1530	[signature] Pace	3-17-18	920	0.6	Y	Y	Y
*Field filtered by client							0.8			
							2.0			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/15/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424013
PM: JMG Due Date: 04/02/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7448-1032-7999, -8002, -8013

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:

Temp Blank? ☒Yes ☐No

Thermometer Used: ☒151401163 ☐G87A9155100842

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 0.5, 0.8, 2.0 **Cooler Temp Corrected (°C):** 0.5, 0.8, 2.0 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** TRUE **Date and Initials of Person Examining Contents:** 3-17-18 JDD

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)? JDD 3-17-18	~~☒Yes~~	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☒Yes	☐No	☐N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒Yes	☐No		12. extra sample: * Primary School Well-GW-031518 09:00
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☒No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐Yes ☐No

Person Contacted: Jonathan Espinoza Date/Time: 03/19/18

Comments/Resolution:

* "MW10S-GW-031618" on COC
samples labeled as "MW7S-GW-031618"
Analyze Primary School and MW10S should be MW7S
Both times 1045

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins			
Opened Time: 1030	Temp: 0.5, 0.8, 2.0	Corrected Temp: 0.5, 0.8, 2.0	
Time: 1050	put in cooler		
Time:	Temp:	Corrected Temp:	

Project Manager Review: Jenni Gross **Date:** 03/20/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 27, 2018

David Hodson
CH2M Hill
33 New Montgomery St.
Suite 2000
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424014

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424014001	**Marlow Well2-GW-031618**	Water	03/16/18 13:10	03/17/18 09:20

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424014001	**Marlow Well2-GW-031618**	EPA 8260B	AEZ	83	PASI-M

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Minneapolis, MN 55414
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424014001	**Marlow Well2-GW-031618**					
EPA 8260B	Acetone	15.3J	ug/L	20.0	03/24/18 08:10	
EPA 8260B	Carbon tetrachloride	66.0	ug/L	1.0	03/24/18 08:10	
EPA 8260B	Chloroform	5.9	ug/L	1.0	03/24/18 08:10	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 27, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Sample: Marlow Well2-GW-031618 **Lab ID: 10424014001** Collected: 03/16/18 13:10 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 08:10	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/24/18 08:10	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/24/18 08:10	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/24/18 08:10	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 08:10	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 08:10	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/24/18 08:10	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 08:10	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/24/18 08:10	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/24/18 08:10	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/24/18 08:10	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 08:10	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 08:10	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/24/18 08:10	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/24/18 08:10	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 08:10	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 08:10	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/24/18 08:10	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/24/18 08:10	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/24/18 08:10	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/24/18 08:10	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/24/18 08:10	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 08:10	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/24/18 08:10	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/24/18 08:10	108-10-1	
Acetone	**15.3J**	ug/L	20.0	8.8	1		03/24/18 08:10	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/24/18 08:10	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/24/18 08:10	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 08:10	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 08:10	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		03/24/18 08:10	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/24/18 08:10	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/24/18 08:10	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/24/18 08:10	75-15-0	
Carbon tetrachloride	**66.0**	ug/L	1.0	0.20	1		03/24/18 08:10	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/24/18 08:10	75-00-3	
Chloroform	**5.9**	ug/L	1.0	0.46	1		03/24/18 08:10	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/24/18 08:10	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Sample: Marlow Well2-GW-031618 **Lab ID: 10424014001** Collected: 03/16/18 13:10 Received: 03/17/18 09:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/24/18 08:10	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/24/18 08:10	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 08:10	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/24/18 08:10	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/24/18 08:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/24/18 08:10	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/24/18 08:10	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 08:10	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/24/18 08:10	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/24/18 08:10	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/24/18 08:10	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/24/18 08:10	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/24/18 08:10	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/24/18 08:10	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 08:10	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 08:10	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/24/18 08:10	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 08:10	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 08:10	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/24/18 08:10	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 08:10	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/24/18 08:10	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/24/18 08:10	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/24/18 08:10	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 08:10	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 08:10	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/24/18 08:10	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/24/18 08:10	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/24/18 08:10	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		03/24/18 08:10	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

QC Batch: 528793 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424014001

METHOD BLANK: 2869762 | Matrix: Water
Associated Lab Samples: 10424014001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/24/18 02:38	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/24/18 02:38	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/24/18 02:38	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1-Dichloroethene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,1-Dichloropropene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/24/18 02:38	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/24/18 02:38	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/24/18 02:38	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/24/18 02:38	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/24/18 02:38	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/24/18 02:38	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/24/18 02:38	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/24/18 02:38	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/24/18 02:38	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/24/18 02:38	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/24/18 02:38	
Acetone	ug/L	<8.8	20.0	8.8	03/24/18 02:38	
Acrolein	ug/L	<4.8	10.0	4.8	03/24/18 02:38	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/24/18 02:38	
Benzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Bromodichloromethane	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN
Bromoform	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
Bromomethane	ug/L	<1.5	4.0	1.5	03/24/18 02:38	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/24/18 02:38	
Carbon tetrachloride	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

METHOD BLANK: 2869762 Matrix: Water
Associated Lab Samples: 10424014001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Chloroethane	ug/L	<0.44	1.0	0.44	03/24/18 02:38	
Chloroform	ug/L	<0.46	1.0	0.46	03/24/18 02:38	
Chloromethane	ug/L	<1.1	4.0	1.1	03/24/18 02:38	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Dibromomethane	ug/L	<0.50	1.0	0.50	03/24/18 02:38	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/24/18 02:38	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/24/18 02:38	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/24/18 02:38	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/24/18 02:38	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/24/18 02:38	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Naphthalene	ug/L	<0.42	1.0	0.42	03/24/18 02:38	
o-Xylene	ug/L	<0.11	0.50	0.11	03/24/18 02:38	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Styrene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/24/18 02:38	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/24/18 02:38	
Toluene	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/24/18 02:38	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/24/18 02:38	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/24/18 02:38	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/24/18 02:38	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/24/18 02:38	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/24/18 02:38	
4-Bromofluorobenzene (S)	%.	99	75-125		03/24/18 02:38	
Toluene-d8 (S)	%.	98	75-125		03/24/18 02:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	98	75-125	
1,1,2-Trichloroethane	ug/L	20	21.7	109	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	20.9	104	75-125	
1,1-Dichloroethene	ug/L	20	19.5	97	73-125	
1,1-Dichloropropene	ug/L	20	20.7	104	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.2	96	72-130	
1,2,3-Trichloropropane	ug/L	20	20.1	101	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.7	99	75-125	
1,2-Dichlorobenzene	ug/L	20	20.9	105	75-125	
1,2-Dichloroethane	ug/L	20	19.6	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.3	103	75-125	
1,2-Dichloropropane	ug/L	20	21.5	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,3-Dichlorobenzene	ug/L	20	20.3	102	75-125	
1,3-Dichloropropane	ug/L	20	21.3	107	75-125	
1,4-Dichlorobenzene	ug/L	20	20.8	104	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	416	104	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.4	97	64-130	
2,2-Dichloropropane	ug/L	20	17.7	89	68-129	
2-Butanone (MEK)	ug/L	100	104	104	65-126	
2-Chlorotoluene	ug/L	20	19.6	98	75-125	
2-Hexanone	ug/L	100	111	111	75-134	
4-Chlorotoluene	ug/L	20	20.8	104	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	75-131	
Acetone	ug/L	100	125	125	68-150	
Acrolein	ug/L	200	210	105	63-149	
Acrylonitrile	ug/L	200	211	106	75-125	
Benzene	ug/L	20	20.2	101	75-125	
Bromobenzene	ug/L	20	20.8	104	75-125	
Bromochloromethane	ug/L	20	20.6	103	75-125	
Bromodichloromethane	ug/L	20	20.8	104	75-125	
Bromoform	ug/L	20	21.2	106	70-125	
Bromomethane	ug/L	20	17.0	85	30-145	
Carbon disulfide	ug/L	20	20.5	102	67-125	
Carbon tetrachloride	ug/L	20	19.4	97	75-125	
Chlorobenzene	ug/L	20	21.0	105	75-125	
Chloroethane	ug/L	20	19.9	100	73-131	
Chloroform	ug/L	20	20.1	100	75-125	
Chloromethane	ug/L	20	20.0	100	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.8	104	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	106	75-125	
Dibromomethane	ug/L	20	20.9	104	75-125	
Dichlorodifluoromethane	ug/L	20	19.7	99	64-127	
Dichlorofluoromethane	ug/L	20	19.3	96	75-125	
Diisopropyl ether	ug/L	20	20.4	102	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.9	105	75-125	
Ethylbenzene	ug/L	20	20.7	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.2	96	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.5	102	72-125	
n-Butylbenzene	ug/L	20	20.5	102	75-125	
n-Propylbenzene	ug/L	20	20.5	103	75-125	
Naphthalene	ug/L	20	19.0	95	61-136	
o-Xylene	ug/L	20	21.0	105	75-125	
p-Isopropyltoluene	ug/L	20	20.8	104	75-125	
sec-Butylbenzene	ug/L	20	20.7	104	75-125	
Styrene	ug/L	20	20.9	105	75-125	
tert-Amylmethyl ether	ug/L	20	20.7	104	75-125	
tert-Butyl Alcohol	ug/L	200	212	106	75-125	
tert-Butylbenzene	ug/L	20	20.4	102	75-125	
Tetrachloroethene	ug/L	20	21.2	106	75-125	
Tetrahydrofuran	ug/L	200	277	139	64-150	
Toluene	ug/L	20	20.5	103	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.5	103	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.9	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	45.9	92	57-126	
Trichloroethene	ug/L	20	20.9	104	75-125	
Trichlorofluoromethane	ug/L	20	19.8	99	74-126	
Vinyl acetate	ug/L	20	19.4	97	72-129	
Vinyl chloride	ug/L	20	20.9	104	71-130	
Xylene (Total)	ug/L	60	63.3	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	21.2	20.9	106	104	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	21.3	21.3	107	106	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	18.7	18.8	94	94	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	20.8	20.2	104	101	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	22.2	22.1	111	111	75-136	0	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	20.6	20.8	102	103	75-125	1	30	
1,1-Dichloroethene	ug/L	<1.0	20	20	19.9	20.1	99	100	75-127	1	30	
1,1-Dichloropropene	ug/L	<1.0	20	20	21.3	21.2	107	106	75-129	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	18.8	19.1	94	96	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	19.3	17.9	97	90	75-125	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	18.9	18.9	94	94	69-131	0	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.3	103	102	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	50.0	51.0	100	102	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.1	18.5	96	93	75-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.2	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	18.8	18.9	94	95	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	41.9	41.7	104	104	75-125	1	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	20.9	20.3	105	102	75-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.3	101	102	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	20.8	20.5	104	102	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	20.4	20.3	102	102	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	419	424	105	106	67-128	1	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	20.0	20.0	100	100	65-150	0	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	18.1	17.8	91	89	65-136	2	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	87.5	88.7	87	89	59-125	1	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.7	19.4	98	97	73-126	1	30	
2-Hexanone	ug/L	<5.0	100	100	102	98.9	102	99	68-138	3	30	
4-Chlorotoluene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	99.4	95.7	99	96	73-125	4	30	
Acetone	ug/L	<20.0	100	100	130	128	130	128	75-150	1	30	
Acrolein	ug/L	<10.0	200	200	190	185	95	93	53-150	3	30	
Acrylonitrile	ug/L	<10.0	200	200	191	187	95	93	69-127	2	30	
Benzene	ug/L	<0.50	20	20	19.7	19.7	98	99	74-125	0	30	
Bromobenzene	ug/L	<0.50	20	20	20.3	20.1	102	100	75-125	1	30	
Bromochloromethane	ug/L	<1.0	20	20	19.7	19.7	99	98	75-125	0	30	
Bromodichloromethane	ug/L	<1.0	20	20	20.5	20.3	103	101	75-125	1	30	
Bromoform	ug/L	<4.0	20	20	20.9	20.9	104	104	68-125	0	30	
Bromomethane	ug/L	<4.0	20	20	17.9	18.9	89	95	37-149	6	30	
Carbon disulfide	ug/L	<1.0	20	20	21.2	21.2	106	106	66-139	0	30	
Carbon tetrachloride	ug/L	<1.0	20	20	20.1	20.6	100	103	75-127	3	30	
Chlorobenzene	ug/L	<0.50	20	20	21.0	21.0	105	105	75-125	0	30	
Chloroethane	ug/L	<1.0	20	20	18.9	18.9	94	95	73-134	0	30	
Chloroform	ug/L	<1.0	20	20	19.4	19.5	97	98	71-125	0	30	
Chloromethane	ug/L	<4.0	20	20	19.5	19.9	97	100	58-133	2	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	20.7	20.6	102	102	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	19.6	19.2	98	96	71-125	2	30	
Dibromochloromethane	ug/L	<0.50	20	20	21.0	20.8	105	104	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	20.1	19.8	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	19.1	19.4	96	97	70-150	2	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	18.0	18.1	90	90	75-126	1	30	
Diisopropyl ether	ug/L	<1.0	20	20	19.3	19.4	96	97	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	19.8	19.7	99	98	74-125	1	30	
Ethylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	20.3	22.2	102	111	60-150	9	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	21.5	21.0	108	105	75-125	2	30	
m&p-Xylene	ug/L	<1.0	40	40	43.2	42.4	108	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	19.1	19.2	96	96	75-125	0	30	
Methylene Chloride	ug/L	<4.0	20	20	19.4	19.4	97	97	72-125	0	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.6	21.0	103	105	73-140	2	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-126	1	30	
Naphthalene	ug/L	<1.0	20	20	18.5	18.1	92	91	61-136	2	30	
o-Xylene	ug/L	<0.50	20	20	21.1	20.5	106	103	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	20.7	20.8	103	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.50	20	20	21.3	21.2	107	106	75-132	1	30	
Styrene	ug/L	<0.50	20	20	21.1	20.6	105	103	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	19.5	19.3	98	96	71-125	1	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	214	192	107	96	72-130	11	30	
tert-Butylbenzene	ug/L	<0.50	20	20	20.4	20.6	102	103	75-126	1	30	
Tetrachloroethene	ug/L	<0.50	20	20	21.9	21.2	110	106	75-125	3	30	
Tetrahydrofuran	ug/L	<10.0	200	200	290	286	145	143	75-150	2	30	
Toluene	ug/L	<0.50	20	20	20.6	20.1	103	100	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	21.2	21.1	106	106	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	20.6	20.4	103	102	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	42.8	42.7	86	85	57-125	0	30	
Trichloroethene	ug/L	6.3	20	20	26.8	26.7	103	102	75-125	1	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	19.1	19.4	95	97	75-135	2	30	
Vinyl acetate	ug/L	<10.0	20	20	17.1	16.8	86	84	57-136	2	30	
Vinyl chloride	ug/L	ND	20	20	20.3	20.6	102	103	74-141	1	30	
Xylene (Total)	ug/L	<1.5	60	60	64.4	62.9	107	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						98	100	75-125			
4-Bromofluorobenzene (S)	%.						100	100	75-125			
Toluene-d8 (S)	%.						100	101	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

Pace Analytical Services, LLC
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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424014

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424014001	**Marlow Well2-GW-031618**	EPA 8260B	528793		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

WO#: 10424014

10424014

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Marlow Well 2-GW-031618	WT	G	3/16	1310	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jonathan E / CH2M	3/16/18	1530	[signature] / Pace	3-17-18	920	0.5			
*Field filtered by client							0.8			
							2.0			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/16/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#: 10424014 PM: JMG Due Date: 04/02/18 CLIENT: UPRR_CH2M

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] SpeeDee [ ] Other: ______

Tracking Number: 7448-1032-7999, -8002, -8013

Custody Seal on Cooler/Box Present? [X] Yes [ ] No **Seals Intact?** [X] Yes [ ] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [X] Bubble Wrap [X] Bubble Bags [ ] None [ ] Other: ______ **Temp Blank?** [X] Yes [ ] No

Thermometer Used: [X] 151401163 [ ] G87A9155100842 **Type of Ice:** [X] Wet [ ] Blue [ ] None [ ] Dry [ ] Melted

Cooler Temp Read (°C): 0.5, 0.8, 2.0 **Cooler Temp Corrected (°C):** 0.5, 0.8, 2.0 **Biological Tissue Frozen?** [ ] Yes [ ] No [X] NA

Temp should be above freezing to 6°C **Correction Factor:** TRUE **Date and Initials of Person Examining Contents:** 3-17-18 JDD

USDA Regulated Soil ([X] N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? [ ] Yes [ ] No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? [ ] Yes [ ] No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	[X] Yes	[ ] No		1.
Chain of Custody Filled Out?	[X] Yes	[ ] No		2.
Chain of Custody Relinquished?	[X] Yes	[ ] No		3.
Sampler Name and/or Signature on COC?	[X] Yes	[ ] No	[ ] N/A	4.
Samples Arrived within Hold Time?	[X] Yes	[ ] No		5.
Short Hold Time Analysis (<72 hr)? JDD	~~Yes~~	[X] No		6.
Rush Turn Around Time Requested? 3-17-18	[ ] Yes	[X] No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	[X] Yes	[ ] No		8.
Correct Containers Used?	[X] Yes	[ ] No		9.
-Pace Containers Used?	[X] Yes	[ ] No		
Containers Intact?	[X] Yes	[ ] No		10.
Filtered Volume Received for Dissolved Tests?	[X] Yes	[ ] No	[ ] N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	[X] Yes	[ ] No		12.
All containers needing acid/base preservation have been checked?	[ ] Yes	[ ] No	[X] N/A	13. [ ] HNO_3 [ ] H_2SO_4 [ ] NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	[ ] Yes	[ ] No	[X] N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	[X] Yes	[ ] No	[ ] N/A	Initial when completed: ______ Lot # of added preservative: ______
Headspace in VOA Vials (>6mm)?	[ ] Yes	[X] No	[ ] N/A	14.
3 Trip Blanks Present?	[ ] Yes	[X] No	[ ] N/A	15.
Trip Blank Custody Seals Present?	[ ] Yes	[X] No	[ ] N/A	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** [ ] Yes [ ] No

Person Contacted: ______ Date/Time: ______

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1030	Temp: 0.5, 0.8, 2.0	Corrected Temp: 0.5, 0.8, 2.0
Time: 1050	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/19/18

Note: Whenever there is a discrepancy affecting North Carolina compliance ... m will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

March 30, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical www.pacelabs.com

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424295

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424295001	**Thorson-GW-031918**	Water	03/19/18 11:00	03/21/18 10:20
10424295002	**Atwood-GW-S-031918**	Water	03/19/18 12:00	03/21/18 10:20
10424295003	**Atwood-GW-H-031918**	Water	03/19/18 13:00	03/21/18 10:20
10424295004	**Stark-GW-031918**	Water	03/19/18 14:00	03/21/18 10:20
10424295005	**Lashaw-GW-031918**	Water	03/19/18 15:00	03/21/18 10:20
10424295006	**Asher-GW-032018**	Water	03/20/18 10:30	03/21/18 10:20
10424295007	**Silva-GW-032018**	Water	03/20/18 11:00	03/21/18 10:20
10424295008	**GWFD1-031918**	Water	03/19/18 13:00	03/21/18 10:20
10424295009	**FD2-031918**	Water	03/19/18 13:30	03/21/18 10:20
10424295010	**FD3-031918**	Water	03/19/18 14:30	03/21/18 10:20
10424295011	**FD4-032018**	Water	03/20/18 10:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424295001	**Thorson-GW-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295002	**Atwood-GW-S-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295003	**Atwood-GW-H-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295004	**Stark-GW-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295005	**Lashaw-GW-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295006	**Asher-GW-032018**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295007	**Silva-GW-032018**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295008	**GWFD1-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295009	**FD2-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295010	**FD3-031918**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10424295011	**FD4-032018**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424295

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424295001	**Thorson-GW-031918**					
RSK 175	Methane	2.6J	ug/L	10.0	03/26/18 07:33	
EPA 6010D	Barium, Dissolved	55.0	ug/L	10.0	03/23/18 10:13	
EPA 6010D	Calcium, Dissolved	24800	ug/L	500	03/23/18 10:13	
EPA 6010D	Iron, Dissolved	1980	ug/L	50.0	03/23/18 10:13	
EPA 6010D	Magnesium, Dissolved	12600	ug/L	500	03/23/18 10:13	
EPA 6010D	Manganese, Dissolved	33.0	ug/L	5.0	03/23/18 10:13	
EPA 6010D	Potassium, Dissolved	4060	ug/L	2500	03/23/18 10:13	
EPA 6010D	Sodium, Dissolved	14900	ug/L	1000	03/23/18 10:13	
EPA 6010D	Zinc, Dissolved	30.8	ug/L	20.0	03/23/18 10:13	
SM 2320B	Alkalinity, Total as CaCO3	148	mg/L	5.0	03/28/18 09:20	
SM 2540C	Total Dissolved Solids	200	mg/L	10.0	03/23/18 14:20	
SM 4500-S-2 D	Sulfide, Total	0.0070J	mg/L	0.020	03/23/18 11:41	M1
EPA 300.0	Chloride	1.3	mg/L	1.2	03/21/18 15:56	
EPA 300.0	Sulfate	2.9	mg/L	1.2	03/21/18 15:56	
EPA 353.2	Nitrogen, NO2 plus NO3	0.012J	mg/L	0.020	03/23/18 14:39	
SM 5310C	Total Organic Carbon	0.32J	mg/L	1.0	03/28/18 16:58	
10424295002	**Atwood-GW-S-031918**					
RSK 175	Methane	1.7J	ug/L	10.0	03/26/18 08:55	
EPA 6010D	Barium, Dissolved	31.3	ug/L	10.0	03/23/18 10:27	
EPA 6010D	Cadmium, Dissolved	0.54J	ug/L	3.0	03/23/18 10:27	
EPA 6010D	Calcium, Dissolved	34400	ug/L	500	03/23/18 10:27	
EPA 6010D	Copper, Dissolved	61.7	ug/L	10.0	03/23/18 10:27	
EPA 6010D	Iron, Dissolved	18.0J	ug/L	50.0	03/23/18 10:27	
EPA 6010D	Lead, Dissolved	9.1J	ug/L	10.0	03/23/18 10:27	
EPA 6010D	Magnesium, Dissolved	11500	ug/L	500	03/23/18 10:27	
EPA 6010D	Manganese, Dissolved	9.1	ug/L	5.0	03/23/18 10:27	
EPA 6010D	Nickel, Dissolved	9.6J	ug/L	20.0	03/23/18 10:27	
EPA 6010D	Potassium, Dissolved	1380J	ug/L	2500	03/23/18 10:27	
EPA 6010D	Sodium, Dissolved	12500	ug/L	1000	03/23/18 10:27	
EPA 6010D	Vanadium, Dissolved	6.8J	ug/L	15.0	03/23/18 10:27	
EPA 6010D	Zinc, Dissolved	5320	ug/L	20.0	03/23/18 10:27	
SM 2320B	Alkalinity, Total as CaCO3	164	mg/L	5.0	03/28/18 09:42	
SM 2540C	Total Dissolved Solids	234	mg/L	10.0	03/26/18 13:45	D6
EPA 300.0	Chloride	1.4	mg/L	1.2	03/21/18 17:38	
EPA 300.0	Nitrate as N	1.0	mg/L	0.10	03/21/18 17:38	H1,M1
EPA 300.0	Sulfate	3.7	mg/L	1.2	03/21/18 17:38	
EPA 353.2	Nitrogen, NO2 plus NO3	1.1	mg/L	0.020	03/23/18 14:42	
SM 5310C	Total Organic Carbon	0.35J	mg/L	1.0	03/28/18 17:41	
10424295003	**Atwood-GW-H-031918**					
RSK 175	Methane	2.0J	ug/L	10.0	03/26/18 07:56	
EPA 6010D	Barium, Dissolved	37.2	ug/L	10.0	03/23/18 10:47	
EPA 6010D	Calcium, Dissolved	30500	ug/L	500	03/23/18 10:47	
EPA 6010D	Copper, Dissolved	20.3	ug/L	10.0	03/23/18 10:47	
EPA 6010D	Magnesium, Dissolved	12400	ug/L	500	03/23/18 10:47	
EPA 6010D	Manganese, Dissolved	1.7J	ug/L	5.0	03/23/18 10:47	
EPA 6010D	Potassium, Dissolved	2600	ug/L	2500	03/23/18 10:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424295003	**Atwood-GW-H-031918**					
EPA 6010D	Sodium, Dissolved	13800	ug/L	1000	03/23/18 10:47	
EPA 6010D	Vanadium, Dissolved	5.4J	ug/L	15.0	03/23/18 10:47	
EPA 6010D	Zinc, Dissolved	87.8	ug/L	20.0	03/23/18 10:47	
SM 2320B	Alkalinity, Total as CaCO3	155	mg/L	5.0	03/28/18 09:58	
SM 2540C	Total Dissolved Solids	196	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.4	mg/L	1.2	03/21/18 12:56	
EPA 300.0	Nitrate as N	0.66	mg/L	0.10	03/21/18 12:56	
EPA 300.0	Sulfate	4.1	mg/L	1.2	03/21/18 12:56	
EPA 353.2	Nitrogen, NO2 plus NO3	0.77	mg/L	0.020	03/23/18 14:46	
SM 5310C	Total Organic Carbon	0.35J	mg/L	1.0	03/28/18 18:51	
10424295004	**Stark-GW-031918**					
RSK 175	Methane	1.2J	ug/L	10.0	03/26/18 08:03	
EPA 6010D	Barium, Dissolved	35.9	ug/L	10.0	03/23/18 10:50	
EPA 6010D	Calcium, Dissolved	34000	ug/L	500	03/23/18 10:50	
EPA 6010D	Copper, Dissolved	66.0	ug/L	10.0	03/23/18 10:50	
EPA 6010D	Magnesium, Dissolved	12100	ug/L	500	03/23/18 10:50	
EPA 6010D	Manganese, Dissolved	0.44J	ug/L	5.0	03/23/18 10:50	
EPA 6010D	Potassium, Dissolved	1840J	ug/L	2500	03/23/18 10:50	
EPA 6010D	Sodium, Dissolved	17500	ug/L	1000	03/23/18 10:50	
EPA 6010D	Vanadium, Dissolved	5.7J	ug/L	15.0	03/23/18 10:50	
EPA 6010D	Zinc, Dissolved	81.8	ug/L	20.0	03/23/18 10:50	
SM 2320B	Alkalinity, Total as CaCO3	108	mg/L	5.0	03/28/18 10:02	
SM 2540C	Total Dissolved Solids	270	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.3	mg/L	1.2	03/21/18 13:26	
EPA 300.0	Nitrate as N	17.9	mg/L	0.50	03/21/18 14:32	H5
EPA 300.0	Sulfate	11.4	mg/L	1.2	03/21/18 13:26	
EPA 353.2	Nitrogen, NO2 plus NO3	19.9	mg/L	0.20	03/23/18 15:24	
SM 5310C	Total Organic Carbon	0.51J	mg/L	1.0	03/28/18 19:05	
10424295005	**Lashaw-GW-031918**					
RSK 175	Methane	1.3J	ug/L	10.0	03/26/18 08:10	
EPA 6010D	Barium, Dissolved	9.3J	ug/L	10.0	03/23/18 10:52	
EPA 6010D	Calcium, Dissolved	26000	ug/L	500	03/23/18 10:52	
EPA 6010D	Copper, Dissolved	6.5J	ug/L	10.0	03/23/18 10:52	
EPA 6010D	Magnesium, Dissolved	13200	ug/L	500	03/23/18 10:52	
EPA 6010D	Potassium, Dissolved	3800	ug/L	2500	03/23/18 10:52	
EPA 6010D	Sodium, Dissolved	15400	ug/L	1000	03/23/18 10:52	
EPA 6010D	Vanadium, Dissolved	10.6J	ug/L	15.0	03/23/18 10:52	
EPA 6010D	Zinc, Dissolved	45.5	ug/L	20.0	03/23/18 10:52	
SM 2320B	Alkalinity, Total as CaCO3	146	mg/L	5.0	03/28/18 10:06	
SM 2540C	Total Dissolved Solids	203	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.7	mg/L	1.2	03/21/18 13:56	
EPA 300.0	Nitrate as N	2.4	mg/L	0.10	03/21/18 13:56	
EPA 300.0	Sulfate	5.7	mg/L	1.2	03/21/18 13:56	
EPA 353.2	Nitrogen, NO2 plus NO3	2.5	mg/L	0.10	03/23/18 15:25	
SM 5310C	Total Organic Carbon	0.42J	mg/L	1.0	03/28/18 19:19	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424295006	**Asher-GW-032018**					
RSK 175	Methane	1.4J	ug/L	10.0	03/26/18 09:17	
EPA 6010D	Barium, Dissolved	90.9	ug/L	10.0	03/23/18 10:55	
EPA 6010D	Calcium, Dissolved	74400	ug/L	500	03/23/18 10:55	
EPA 6010D	Chromium, Dissolved	0.74J	ug/L	10.0	03/23/18 10:55	
EPA 6010D	Copper, Dissolved	80.0	ug/L	10.0	03/23/18 10:55	
EPA 6010D	Magnesium, Dissolved	21800	ug/L	500	03/23/18 10:55	
EPA 6010D	Potassium, Dissolved	1400J	ug/L	2500	03/23/18 10:55	
EPA 6010D	Sodium, Dissolved	23900	ug/L	1000	03/23/18 10:55	
EPA 6010D	Vanadium, Dissolved	10.6J	ug/L	15.0	03/23/18 10:55	
EPA 6010D	Zinc, Dissolved	44.0	ug/L	20.0	03/23/18 10:55	
SM 2320B	Alkalinity, Total as CaCO3	236	mg/L	5.0	03/28/18 11:28	
SM 2540C	Total Dissolved Solids	412	mg/L	20.0	03/26/18 13:45	
EPA 300.0	Chloride	11.6	mg/L	1.2	03/21/18 19:59	
EPA 300.0	Nitrate as N	7.9	mg/L	0.10	03/21/18 19:59	
EPA 300.0	Sulfate	44.4	mg/L	1.2	03/21/18 19:59	
EPA 353.2	Nitrogen, NO2 plus NO3	8.6	mg/L	0.20	03/23/18 15:26	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	03/28/18 19:33	
10424295007	**Silva-GW-032018**					
EPA 6010D	Barium, Dissolved	0.31J	ug/L	10.0	03/23/18 10:58	
EPA 6010D	Calcium, Dissolved	122J	ug/L	500	03/23/18 10:58	
EPA 6010D	Copper, Dissolved	23.8	ug/L	10.0	03/23/18 10:58	
EPA 6010D	Magnesium, Dissolved	32.6J	ug/L	500	03/23/18 10:58	
EPA 6010D	Sodium, Dissolved	83700	ug/L	1000	03/23/18 10:58	
EPA 6010D	Vanadium, Dissolved	3.2J	ug/L	15.0	03/23/18 10:58	
EPA 6010D	Zinc, Dissolved	69.1	ug/L	20.0	03/23/18 10:58	
SM 2320B	Alkalinity, Total as CaCO3	170	mg/L	5.0	03/28/18 11:31	
SM 2540C	Total Dissolved Solids	263	mg/L	10.0	03/26/18 13:45	
EPA 300.0	Chloride	8.4	mg/L	1.2	03/21/18 20:14	
EPA 300.0	Nitrate as N	0.58	mg/L	0.10	03/21/18 20:14	
EPA 300.0	Sulfate	9.3	mg/L	1.2	03/21/18 20:14	
EPA 353.2	Nitrogen, NO2 plus NO3	0.67	mg/L	0.020	03/23/18 14:53	
SM 5310C	Total Organic Carbon	0.57J	mg/L	1.0	03/28/18 19:48	
10424295008	**GWFD1-031918**					
EPA 6010D	Barium, Dissolved	37.4	ug/L	10.0	03/23/18 11:01	
EPA 6010D	Calcium, Dissolved	30500	ug/L	500	03/23/18 11:01	
EPA 6010D	Copper, Dissolved	26.4	ug/L	10.0	03/23/18 11:01	
EPA 6010D	Magnesium, Dissolved	12500	ug/L	500	03/23/18 11:01	
EPA 6010D	Manganese, Dissolved	1.6J	ug/L	5.0	03/23/18 11:01	
EPA 6010D	Potassium, Dissolved	2630	ug/L	2500	03/23/18 11:01	
EPA 6010D	Sodium, Dissolved	14000	ug/L	1000	03/23/18 11:01	
EPA 6010D	Vanadium, Dissolved	5.3J	ug/L	15.0	03/23/18 11:01	
EPA 6010D	Zinc, Dissolved	102	ug/L	20.0	03/23/18 11:01	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	03/28/18 10:40	
SM 2540C	Total Dissolved Solids	201	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.4	mg/L	1.2	03/21/18 12:40	
EPA 300.0	Nitrate as N	0.66	mg/L	0.10	03/21/18 12:40	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424295008	**GWFD1-031918**					
EPA 300.0	Sulfate	4.1	mg/L	1.2	03/21/18 12:40	
EPA 353.2	Nitrogen, NO2 plus NO3	0.74	mg/L	0.020	03/23/18 14:54	
SM 5310C	Total Organic Carbon	0.36J	mg/L	1.0	03/28/18 20:02	
10424295009	**FD2-031918**					
RSK 175	Methane	1.3J	ug/L	10.0	03/26/18 08:25	
EPA 6010D	Barium, Dissolved	37.1	ug/L	10.0	03/23/18 11:03	
EPA 6010D	Calcium, Dissolved	34900	ug/L	500	03/23/18 11:03	
EPA 6010D	Copper, Dissolved	75.4	ug/L	10.0	03/23/18 11:03	
EPA 6010D	Magnesium, Dissolved	12400	ug/L	500	03/23/18 11:03	
EPA 6010D	Manganese, Dissolved	0.72J	ug/L	5.0	03/23/18 11:03	
EPA 6010D	Potassium, Dissolved	1920J	ug/L	2500	03/23/18 11:03	
EPA 6010D	Sodium, Dissolved	18100	ug/L	1000	03/23/18 11:03	
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	03/23/18 11:03	
EPA 6010D	Zinc, Dissolved	84.1	ug/L	20.0	03/23/18 11:03	
SM 2320B	Alkalinity, Total as CaCO3	106	mg/L	5.0	03/28/18 10:55	
SM 2540C	Total Dissolved Solids	273	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.3	mg/L	1.2	03/21/18 13:11	
EPA 300.0	Nitrate as N	18.0	mg/L	0.50	03/21/18 14:14	H5
EPA 300.0	Sulfate	11.3	mg/L	1.2	03/21/18 13:11	
EPA 353.2	Nitrogen, NO2 plus NO3	18.4	mg/L	0.20	03/23/18 15:27	
SM 5310C	Total Organic Carbon	0.45J	mg/L	1.0	03/28/18 20:16	
10424295010	**FD3-031918**					
RSK 175	Methane	2.0J	ug/L	10.0	03/26/18 08:32	
EPA 6010D	Barium, Dissolved	9.4J	ug/L	10.0	03/23/18 11:15	
EPA 6010D	Calcium, Dissolved	26300	ug/L	500	03/23/18 11:15	
EPA 6010D	Copper, Dissolved	7.2J	ug/L	10.0	03/23/18 11:15	
EPA 6010D	Magnesium, Dissolved	13400	ug/L	500	03/23/18 11:15	
EPA 6010D	Potassium, Dissolved	3840	ug/L	2500	03/23/18 11:15	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	03/23/18 11:15	
EPA 6010D	Thallium, Dissolved	4.9J	ug/L	20.0	03/23/18 11:15	
EPA 6010D	Vanadium, Dissolved	10.6J	ug/L	15.0	03/23/18 11:15	
EPA 6010D	Zinc, Dissolved	37.0	ug/L	20.0	03/23/18 11:15	
SM 2320B	Alkalinity, Total as CaCO3	143	mg/L	5.0	03/28/18 11:08	
SM 2540C	Total Dissolved Solids	202	mg/L	10.0	03/23/18 14:20	
EPA 300.0	Chloride	1.7	mg/L	1.2	03/21/18 13:41	
EPA 300.0	Nitrate as N	2.5	mg/L	0.10	03/21/18 13:41	
EPA 300.0	Sulfate	5.7	mg/L	1.2	03/21/18 13:41	
EPA 353.2	Nitrogen, NO2 plus NO3	2.7	mg/L	0.10	03/23/18 15:31	
SM 5310C	Total Organic Carbon	0.43J	mg/L	1.0	03/28/18 20:30	
10424295011	**FD4-032018**					
RSK 175	Methane	1.6J	ug/L	10.0	03/26/18 09:31	
EPA 6010D	Barium, Dissolved	94.1	ug/L	10.0	03/23/18 11:18	
EPA 6010D	Calcium, Dissolved	76400	ug/L	500	03/23/18 11:18	
EPA 6010D	Chromium, Dissolved	0.91J	ug/L	10.0	03/23/18 11:18	
EPA 6010D	Copper, Dissolved	71.5	ug/L	10.0	03/23/18 11:18	
EPA 6010D	Magnesium, Dissolved	22600	ug/L	500	03/23/18 11:18	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424295011	**FD4-032018**					
EPA 6010D	Manganese, Dissolved	0.48J	ug/L	5.0	03/23/18 11:18	
EPA 6010D	Potassium, Dissolved	1460J	ug/L	2500	03/23/18 11:18	
EPA 6010D	Sodium, Dissolved	24700	ug/L	1000	03/23/18 11:18	
EPA 6010D	Vanadium, Dissolved	10.9J	ug/L	15.0	03/23/18 11:18	
EPA 6010D	Zinc, Dissolved	34.3	ug/L	20.0	03/23/18 11:18	
SM 2320B	Alkalinity, Total as CaCO3	244	mg/L	5.0	03/28/18 11:35	
SM 2540C	Total Dissolved Solids	402	mg/L	20.0	03/26/18 13:45	
EPA 300.0	Chloride	11.7	mg/L	1.2	03/21/18 20:53	
EPA 300.0	Nitrate as N	8.0	mg/L	0.10	03/21/18 20:53	
EPA 300.0	Sulfate	44.6	mg/L	1.2	03/21/18 20:53	
EPA 353.2	Nitrogen, NO2 plus NO3	8.2	mg/L	0.20	03/23/18 15:32	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	03/28/18 20:44	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424295

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 528820

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 2869930)
  - Total Dissolved Solids

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424295

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 104961

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424295001,10424295002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 452617)
  - Sulfide, Total
- MS (Lab ID: 452619)
  - Sulfide, Total

QC Batch: 104997

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2073063001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 452745)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- Atwood-GW-S-031918 (Lab ID: 10424295002)
- Thorson-GW-031918 (Lab ID: 10424295001)

H5: Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
- FD2-031918 (Lab ID: 10424295009)
- Stark-GW-031918 (Lab ID: 10424295004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528395

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424295001,10424295002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2867733)
  - Nitrate as N
- MSD (Lab ID: 2867734)
  - Nitrate as N

Additional Comments:

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 528836

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7584181002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2870035)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2870036)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 528835

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2870030)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2870031)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 30, 2018

General Information:
11 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Thorson-GW-031918 **Lab ID: 10424295001** Collected: 03/19/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 07:33	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 07:33	74-85-1	
Methane	**2.6J**	ug/L	10.0	1.1	1		03/26/18 07:33	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:13	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:13	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:13	7440-38-2	
Barium, Dissolved	**55.0**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:13	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:13	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:13	7440-43-9	
Calcium, Dissolved	**24800**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:13	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:13	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:13	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:13	7440-50-8	
Iron, Dissolved	**1980**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:13	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:13	7439-92-1	
Magnesium, Dissolved	**12600**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:13	7439-95-4	
Manganese, Dissolved	**33.0**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:13	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:13	7440-02-0	
Potassium, Dissolved	**4060**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:13	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:13	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:13	7440-22-4	
Sodium, Dissolved	**14900**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:13	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:13	7440-28-0	
Vanadium, Dissolved	**<0.42**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:13	7440-62-2	
Zinc, Dissolved	**30.8**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:13	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:29	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**148**	mg/L	5.0	1.4	1		03/28/18 09:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**200**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.0070J**	mg/L	0.020	0.0050	1		03/23/18 11:41	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.14	1		03/21/18 15:56	16887-00-6	
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		03/21/18 15:56	14797-55-8	H1
Sulfate	**2.9**	mg/L	1.2	0.27	1		03/21/18 15:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Thorson-GW-031918 **Lab ID: 10424295001** Collected: 03/19/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.012J**	mg/L	0.020	0.0075	1		03/23/18 14:39		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:06		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.32J**	mg/L	1.0	0.20	1		03/28/18 16:58	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Atwood-GW-S-031918 **Lab ID: 10424295002** Collected: 03/19/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:55	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:55	74-85-1	
Methane	**1.7J**	ug/L	10.0	1.1	1		03/26/18 08:55	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:27	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:27	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:27	7440-38-2	
Barium, Dissolved	**31.3**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:27	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:27	7440-41-7	
Cadmium, Dissolved	**0.54J**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:27	7440-43-9	
Calcium, Dissolved	**34400**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:27	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:27	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:27	7440-48-4	
Copper, Dissolved	**61.7**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:27	7440-50-8	
Iron, Dissolved	**18.0J**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:27	7439-89-6	
Lead, Dissolved	**9.1J**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:27	7439-92-1	
Magnesium, Dissolved	**11500**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:27	7439-95-4	
Manganese, Dissolved	**9.1**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:27	7439-96-5	
Nickel, Dissolved	**9.6J**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:27	7440-02-0	
Potassium, Dissolved	**1380J**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:27	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:27	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:27	7440-22-4	
Sodium, Dissolved	**12500**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:27	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:27	7440-28-0	
Vanadium, Dissolved	**6.8J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:27	7440-62-2	
Zinc, Dissolved	**5320**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:27	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:35	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**164**	mg/L	5.0	1.4	1		03/28/18 09:42		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**234**	mg/L	10.0	5.0	1		03/26/18 13:45		D6
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:43	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		03/21/18 17:38	16887-00-6	
Nitrate as N	**1.0**	mg/L	0.10	0.0079	1		03/21/18 17:38	14797-55-8	H1,M1
Sulfate	**3.7**	mg/L	1.2	0.27	1		03/21/18 17:38	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Atwood-GW-S-031918 **Lab ID: 10424295002** Collected: 03/19/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.1**	mg/L	0.020	0.0075	1		03/23/18 14:42		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:07		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.35J**	mg/L	1.0	0.20	1		03/28/18 17:41	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Atwood-GW-H-031918 **Lab ID: 10424295003** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 07:56	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 07:56	74-85-1	
Methane	**2.0J**	ug/L	10.0	1.1	1		03/26/18 07:56	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:47	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:47	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:47	7440-38-2	
Barium, Dissolved	**37.2**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:47	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:47	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:47	7440-43-9	
Calcium, Dissolved	**30500**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:47	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:47	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:47	7440-48-4	
Copper, Dissolved	**20.3**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:47	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:47	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:47	7439-92-1	
Magnesium, Dissolved	**12400**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:47	7439-95-4	
Manganese, Dissolved	**1.7J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:47	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:47	7440-02-0	
Potassium, Dissolved	**2600**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:47	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:47	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:47	7440-22-4	
Sodium, Dissolved	**13800**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:47	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:47	7440-28-0	
Vanadium, Dissolved	**5.4J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:47	7440-62-2	
Zinc, Dissolved	**87.8**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:47	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:45	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**155**	mg/L	5.0	1.4	1		03/28/18 09:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**196**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:45	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		03/21/18 12:56	16887-00-6	
Nitrate as N	**0.66**	mg/L	0.10	0.0079	1		03/21/18 12:56	14797-55-8	
Sulfate	**4.1**	mg/L	1.2	0.27	1		03/21/18 12:56	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Atwood-GW-H-031918 **Lab ID: 10424295003** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.77**	mg/L	0.020	0.0075	1		03/23/18 14:46		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:10		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.35J**	mg/L	1.0	0.20	1		03/28/18 18:51	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Stark-GW-031918 **Lab ID: 10424295004** Collected: 03/19/18 14:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:03	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:03	74-85-1	
Methane	**1.2J**	ug/L	10.0	1.1	1		03/26/18 08:03	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:50	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:50	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:50	7440-38-2	
Barium, Dissolved	**35.9**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:50	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:50	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:50	7440-43-9	
Calcium, Dissolved	**34000**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:50	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:50	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:50	7440-48-4	
Copper, Dissolved	**66.0**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:50	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:50	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:50	7439-92-1	
Magnesium, Dissolved	**12100**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:50	7439-95-4	
Manganese, Dissolved	**0.44J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:50	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:50	7440-02-0	
Potassium, Dissolved	**1840J**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:50	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:50	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:50	7440-22-4	
Sodium, Dissolved	**17500**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:50	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:50	7440-28-0	
Vanadium, Dissolved	**5.7J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:50	7440-62-2	
Zinc, Dissolved	**81.8**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:50	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:47	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**108**	mg/L	5.0	1.4	1		03/28/18 10:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**270**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:46	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.14	1		03/21/18 13:26	16887-00-6	
Nitrate as N	**17.9**	mg/L	0.50	0.040	5		03/21/18 14:32	14797-55-8	H5
Sulfate	**11.4**	mg/L	1.2	0.27	1		03/21/18 13:26	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Stark-GW-031918 **Lab ID: 10424295004** Collected: 03/19/18 14:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**19.9**	mg/L	0.20	0.075	10		03/23/18 15:24		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:11		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.51J**	mg/L	1.0	0.20	1		03/28/18 19:05	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Lashaw-GW-031918 **Lab ID: 10424295005** Collected: 03/19/18 15:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:10	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:10	74-85-1	
Methane	**1.3J**	ug/L	10.0	1.1	1		03/26/18 08:10	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:52	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:52	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:52	7440-38-2	
Barium, Dissolved	**9.3J**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:52	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:52	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:52	7440-43-9	
Calcium, Dissolved	**26000**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:52	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:52	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:52	7440-48-4	
Copper, Dissolved	**6.5J**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:52	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:52	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:52	7439-92-1	
Magnesium, Dissolved	**13200**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:52	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:52	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:52	7440-02-0	
Potassium, Dissolved	**3800**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:52	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:52	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:52	7440-22-4	
Sodium, Dissolved	**15400**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:52	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:52	7440-28-0	
Vanadium, Dissolved	**10.6J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:52	7440-62-2	
Zinc, Dissolved	**45.5**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:52	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**146**	mg/L	5.0	1.4	1		03/28/18 10:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**203**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:47	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.14	1		03/21/18 13:56	16887-00-6	
Nitrate as N	**2.4**	mg/L	0.10	0.0079	1		03/21/18 13:56	14797-55-8	
Sulfate	**5.7**	mg/L	1.2	0.27	1		03/21/18 13:56	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Lashaw-GW-031918 **Lab ID: 10424295005** Collected: 03/19/18 15:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.5**	mg/L	0.10	0.037	5		03/23/18 15:25		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:11		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.42J**	mg/L	1.0	0.20	1		03/28/18 19:19	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Asher-GW-032018 **Lab ID: 10424295006** Collected: 03/20/18 10:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 09:17	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 09:17	74-85-1	
Methane	**1.4J**	ug/L	10.0	1.1	1		03/26/18 09:17	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:55	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:55	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:55	7440-38-2	
Barium, Dissolved	**90.9**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:55	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:55	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:55	7440-43-9	
Calcium, Dissolved	**74400**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:55	7440-70-2	
Chromium, Dissolved	**0.74J**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:55	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:55	7440-48-4	
Copper, Dissolved	**80.0**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:55	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:55	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:55	7439-92-1	
Magnesium, Dissolved	**21800**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:55	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:55	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:55	7440-02-0	
Potassium, Dissolved	**1400J**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:55	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:55	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:55	7440-22-4	
Sodium, Dissolved	**23900**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:55	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:55	7440-28-0	
Vanadium, Dissolved	**10.6J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:55	7440-62-2	
Zinc, Dissolved	**44.0**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:55	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:51	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**236**	mg/L	5.0	1.4	1		03/28/18 11:28		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**412**	mg/L	20.0	10.0	1		03/26/18 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 14:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.6**	mg/L	1.2	0.14	1		03/21/18 19:59	16887-00-6	
Nitrate as N	**7.9**	mg/L	0.10	0.0079	1		03/21/18 19:59	14797-55-8	
Sulfate	**44.4**	mg/L	1.2	0.27	1		03/21/18 19:59	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Asher-GW-032018 **Lab ID: 10424295006** Collected: 03/20/18 10:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**8.6**	mg/L	0.20	0.075	10		03/23/18 15:26		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:11		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.4**	mg/L	1.0	0.20	1		03/28/18 19:33	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Silva-GW-032018 **Lab ID: 10424295007** Collected: 03/20/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 09:24	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 09:24	74-85-1	
Methane	**<1.1**	ug/L	10.0	1.1	1		03/26/18 09:24	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 10:58	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 10:58	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 10:58	7440-38-2	
Barium, Dissolved	**0.31J**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 10:58	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 10:58	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 10:58	7440-43-9	
Calcium, Dissolved	**122J**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 10:58	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 10:58	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 10:58	7440-48-4	
Copper, Dissolved	**23.8**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 10:58	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 10:58	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 10:58	7439-92-1	
Magnesium, Dissolved	**32.6J**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 10:58	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 10:58	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 10:58	7440-02-0	
Potassium, Dissolved	**<126**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 10:58	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 10:58	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 10:58	7440-22-4	
Sodium, Dissolved	**83700**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 10:58	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 10:58	7440-28-0	
Vanadium, Dissolved	**3.2J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 10:58	7440-62-2	
Zinc, Dissolved	**69.1**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 10:58	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:53	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**170**	mg/L	5.0	1.4	1		03/28/18 11:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**263**	mg/L	10.0	5.0	1		03/26/18 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 14:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**8.4**	mg/L	1.2	0.14	1		03/21/18 20:14	16887-00-6	
Nitrate as N	**0.58**	mg/L	0.10	0.0079	1		03/21/18 20:14	14797-55-8	
Sulfate	**9.3**	mg/L	1.2	0.27	1		03/21/18 20:14	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: Silva-GW-032018 **Lab ID: 10424295007** Collected: 03/20/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.67**	mg/L	0.020	0.0075	1		03/23/18 14:53		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:12		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.57J**	mg/L	1.0	0.20	1		03/28/18 19:48	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: GWFD1-031918 **Lab ID: 10424295008** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:18	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:18	74-85-1	
Methane	**<1.1**	ug/L	10.0	1.1	1		03/26/18 08:18	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 11:01	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 11:01	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 11:01	7440-38-2	
Barium, Dissolved	**37.4**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 11:01	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 11:01	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 11:01	7440-43-9	
Calcium, Dissolved	**30500**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 11:01	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 11:01	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 11:01	7440-48-4	
Copper, Dissolved	**26.4**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 11:01	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 11:01	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 11:01	7439-92-1	
Magnesium, Dissolved	**12500**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 11:01	7439-95-4	
Manganese, Dissolved	**1.6J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 11:01	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 11:01	7440-02-0	
Potassium, Dissolved	**2630**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 11:01	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 11:01	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 11:01	7440-22-4	
Sodium, Dissolved	**14000**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 11:01	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 11:01	7440-28-0	
Vanadium, Dissolved	**5.3J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 11:01	7440-62-2	
Zinc, Dissolved	**102**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 11:01	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:55	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**154**	mg/L	5.0	1.4	1		03/28/18 10:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**201**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:48	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.14	1		03/21/18 12:40	16887-00-6	
Nitrate as N	**0.66**	mg/L	0.10	0.0079	1		03/21/18 12:40	14797-55-8	
Sulfate	**4.1**	mg/L	1.2	0.27	1		03/21/18 12:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: GWFD1-031918 **Lab ID: 10424295008** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.74**	mg/L	0.020	0.0075	1		03/23/18 14:54		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:12		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.36J**	mg/L	1.0	0.20	1		03/28/18 20:02	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD2-031918 **Lab ID: 10424295009** Collected: 03/19/18 13:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:25	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:25	74-85-1	
Methane	**1.3J**	ug/L	10.0	1.1	1		03/26/18 08:25	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 11:03	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 11:03	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 11:03	7440-38-2	
Barium, Dissolved	**37.1**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 11:03	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 11:03	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 11:03	7440-43-9	
Calcium, Dissolved	**34900**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 11:03	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 11:03	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 11:03	7440-48-4	
Copper, Dissolved	**75.4**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 11:03	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 11:03	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 11:03	7439-92-1	
Magnesium, Dissolved	**12400**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 11:03	7439-95-4	
Manganese, Dissolved	**0.72J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 11:03	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 11:03	7440-02-0	
Potassium, Dissolved	**1920J**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 11:03	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 11:03	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 11:03	7440-22-4	
Sodium, Dissolved	**18100**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 11:03	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 11:03	7440-28-0	
Vanadium, Dissolved	**5.8J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 11:03	7440-62-2	
Zinc, Dissolved	**84.1**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 11:03	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:57	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**106**	mg/L	5.0	1.4	1		03/28/18 10:55		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**273**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:49	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.14	1		03/21/18 13:11	16887-00-6	
Nitrate as N	**18.0**	mg/L	0.50	0.040	5		03/21/18 14:14	14797-55-8	H5
Sulfate	**11.3**	mg/L	1.2	0.27	1		03/21/18 13:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD2-031918 **Lab ID: 10424295009** Collected: 03/19/18 13:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**18.4**	mg/L	0.20	0.075	10		03/23/18 15:27		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.45J**	mg/L	1.0	0.20	1		03/28/18 20:16	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD3-031918 **Lab ID: 10424295010** Collected: 03/19/18 14:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 08:32	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 08:32	74-85-1	
Methane	**2.0J**	ug/L	10.0	1.1	1		03/26/18 08:32	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 11:15	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 11:15	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 11:15	7440-38-2	
Barium, Dissolved	**9.4J**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 11:15	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 11:15	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 11:15	7440-43-9	
Calcium, Dissolved	**26300**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 11:15	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 11:15	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 11:15	7440-48-4	
Copper, Dissolved	**7.2J**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 11:15	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 11:15	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 11:15	7439-92-1	
Magnesium, Dissolved	**13400**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 11:15	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 11:15	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 11:15	7440-02-0	
Potassium, Dissolved	**3840**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 11:15	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 11:15	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 11:15	7440-22-4	
Sodium, Dissolved	**15600**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 11:15	7440-23-5	
Thallium, Dissolved	**4.9J**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 11:15	7440-28-0	
Vanadium, Dissolved	**10.6J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 11:15	7440-62-2	
Zinc, Dissolved	**37.0**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 11:15	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 14:59	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**143**	mg/L	5.0	1.4	1		03/28/18 11:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**202**	mg/L	10.0	5.0	1		03/23/18 14:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 11:49	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.14	1		03/21/18 13:41	16887-00-6	
Nitrate as N	**2.5**	mg/L	0.10	0.0079	1		03/21/18 13:41	14797-55-8	
Sulfate	**5.7**	mg/L	1.2	0.27	1		03/21/18 13:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD3-031918 **Lab ID: 10424295010** Collected: 03/19/18 14:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.7**	mg/L	0.10	0.037	5		03/23/18 15:31		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.43J**	mg/L	1.0	0.20	1		03/28/18 20:30	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD4-032018 **Lab ID: 10424295011** Collected: 03/20/18 10:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		03/26/18 09:31	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		03/26/18 09:31	74-85-1	
Methane	**1.6J**	ug/L	10.0	1.1	1		03/26/18 09:31	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	03/22/18 10:25	03/23/18 11:18	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	03/22/18 10:25	03/23/18 11:18	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	03/22/18 10:25	03/23/18 11:18	7440-38-2	
Barium, Dissolved	**94.1**	ug/L	10.0	0.22	1	03/22/18 10:25	03/23/18 11:18	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	03/22/18 10:25	03/23/18 11:18	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	03/22/18 10:25	03/23/18 11:18	7440-43-9	
Calcium, Dissolved	**76400**	ug/L	500	24.7	1	03/22/18 10:25	03/23/18 11:18	7440-70-2	
Chromium, Dissolved	**0.91J**	ug/L	10.0	0.50	1	03/22/18 10:25	03/23/18 11:18	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	03/22/18 10:25	03/23/18 11:18	7440-48-4	
Copper, Dissolved	**71.5**	ug/L	10.0	0.83	1	03/22/18 10:25	03/23/18 11:18	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	03/22/18 10:25	03/23/18 11:18	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	03/22/18 10:25	03/23/18 11:18	7439-92-1	
Magnesium, Dissolved	**22600**	ug/L	500	2.6	1	03/22/18 10:25	03/23/18 11:18	7439-95-4	
Manganese, Dissolved	**0.48J**	ug/L	5.0	0.38	1	03/22/18 10:25	03/23/18 11:18	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/22/18 10:25	03/23/18 11:18	7440-02-0	
Potassium, Dissolved	**1460J**	ug/L	2500	126	1	03/22/18 10:25	03/23/18 11:18	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	03/22/18 10:25	03/23/18 11:18	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	03/22/18 10:25	03/23/18 11:18	7440-22-4	
Sodium, Dissolved	**24700**	ug/L	1000	44.6	1	03/22/18 10:25	03/23/18 11:18	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	03/22/18 10:25	03/23/18 11:18	7440-28-0	
Vanadium, Dissolved	**10.9J**	ug/L	15.0	0.42	1	03/22/18 10:25	03/23/18 11:18	7440-62-2	
Zinc, Dissolved	**34.3**	ug/L	20.0	1.8	1	03/22/18 10:25	03/23/18 11:18	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	03/22/18 08:53	03/27/18 15:02	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**244**	mg/L	5.0	1.4	1		03/28/18 11:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**402**	mg/L	20.0	10.0	1		03/26/18 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		03/23/18 14:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.7**	mg/L	1.2	0.14	1		03/21/18 20:53	16887-00-6	
Nitrate as N	**8.0**	mg/L	0.10	0.0079	1		03/21/18 20:53	14797-55-8	
Sulfate	**44.6**	mg/L	1.2	0.27	1		03/21/18 20:53	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Sample: FD4-032018 **Lab ID: 10424295011** Collected: 03/20/18 10:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**8.2**	mg/L	0.20	0.075	10		03/23/18 15:32		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	03/29/18 10:43	03/30/18 10:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.4**	mg/L	1.0	0.20	1		03/28/18 20:44	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528910 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2870781 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	03/26/18 07:18	
Ethene	ug/L	<0.68	10.0	0.68	03/26/18 07:18	
Methane	ug/L	2.2J	10.0	1.1	03/26/18 07:18	

LABORATORY CONTROL SAMPLE & LCSD: 2870782 2870783

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	106	96	93	85-115	3	20	
Ethene	ug/L	106	103	99.4	97	94	85-115	3	20	
Methane	ug/L	60.7	57.9	56.9	96	94	85-115	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2870784 2870785

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<4.9	114	114	136	165	119	145	30-150	20	20	
Ethene	ug/L	<0.68	106	106	125	150	118	142	30-150	18	20	
Methane	ug/L	2.6J	60.7	60.7	72.5	88.4	115	141	30-150	20	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2870786 2870787

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<4.9	114	114	87.5	74.2	77	65	30-150	16	20	
Ethene	ug/L	<0.68	106	106	81.6	69.3	77	65	30-150	16	20	
Methane	ug/L	1.7J	60.7	60.7	50.5	42.2	80	67	30-150	18	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528502 — Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A — Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2868467 — Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	03/27/18 14:22	

LABORATORY CONTROL SAMPLE: 2868468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868469 2868470

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.4	5.2	108	103	80-120	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868471 2868472

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.062	5	5	5.1	5.3	103	105	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528499 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2868451 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	03/23/18 10:04	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	03/23/18 10:04	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	03/23/18 10:04	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	03/23/18 10:04	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	03/23/18 10:04	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	03/23/18 10:04	
Calcium, Dissolved	ug/L	<24.7	500	24.7	03/23/18 10:04	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	03/23/18 10:04	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	03/23/18 10:04	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	03/23/18 10:04	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	03/23/18 10:04	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	03/23/18 10:04	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	03/23/18 10:04	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	03/23/18 10:04	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/23/18 10:04	
Potassium, Dissolved	ug/L	<126	2500	126	03/23/18 10:04	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	03/23/18 10:04	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	03/23/18 10:04	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	03/23/18 10:04	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	03/23/18 10:04	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	03/23/18 10:04	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	03/23/18 10:04	

LABORATORY CONTROL SAMPLE: 2868452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21100	106	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1010	101	80-120	
Calcium, Dissolved	ug/L	20000	19100	96	80-120	
Chromium, Dissolved	ug/L	1000	997	100	80-120	
Cobalt, Dissolved	ug/L	1000	998	100	80-120	
Copper, Dissolved	ug/L	1000	982	98	80-120	
Iron, Dissolved	ug/L	20000	20000	100	80-120	
Lead, Dissolved	ug/L	1000	1010	101	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

LABORATORY CONTROL SAMPLE: 2868452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19800	99	80-120	
Manganese, Dissolved	ug/L	1000	1020	102	80-120	
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	19900	99	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	487	97	80-120	
Sodium, Dissolved	ug/L	20000	19700	98	80-120	
Thallium, Dissolved	ug/L	1000	1010	101	80-120	
Vanadium, Dissolved	ug/L	1000	963	96	80-120	
Zinc, Dissolved	ug/L	1000	998	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868453 2868454

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	21400	21700	107	108	75-125	1	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1030	1030	103	103	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1020	1040	102	103	75-125	1	20	
Barium, Dissolved	ug/L	55.0	1000	1000	1080	1090	103	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1050	104	105	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1040	102	104	75-125	1	20	
Calcium, Dissolved	ug/L	24800	20000	20000	44500	44900	98	100	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	1000	1020	100	102	75-125	1	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	995	1010	99	101	75-125	1	20	
Copper, Dissolved	ug/L	<0.83	1000	1000	998	1010	100	101	75-125	1	20	
Iron, Dissolved	ug/L	1980	20000	20000	22100	22300	100	102	75-125	1	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1010	1020	101	102	75-125	1	20	
Magnesium, Dissolved	ug/L	12600	20000	20000	33000	33300	102	104	75-125	1	20	
Manganese, Dissolved	ug/L	33.0	1000	1000	1050	1060	102	103	75-125	1	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	999	1010	100	101	75-125	1	20	
Potassium, Dissolved	ug/L	4060	20000	20000	24800	25000	103	105	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1070	1070	107	107	75-125	0	20	
Silver, Dissolved	ug/L	<0.27	500	500	493	499	99	100	75-125	1	20	
Sodium, Dissolved	ug/L	14900	20000	20000	34900	35200	100	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	1010	1020	101	102	75-125	1	20	
Vanadium, Dissolved	ug/L	<0.42	1000	1000	975	988	97	99	75-125	1	20	
Zinc, Dissolved	ug/L	30.8	1000	1000	1020	1040	99	100	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868455 2868456

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<8.6	20000	20000	20900	21300	104	106	75-125	2	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	998	1020	100	102	75-125	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2868455 2868456

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1000	1020	100	102	75-125	2	20	
Barium, Dissolved	ug/L	31.3	1000	1000	1030	1050	100	102	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1020	1030	102	103	75-125	2	20	
Cadmium, Dissolved	ug/L	0.54J	1000	1000	1000	1020	100	102	75-125	2	20	
Calcium, Dissolved	ug/L	34400	20000	20000	53700	54100	96	98	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	980	996	98	100	75-125	2	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	969	987	97	99	75-125	2	20	
Copper, Dissolved	ug/L	61.7	1000	1000	1030	1050	97	99	75-125	2	20	
Iron, Dissolved	ug/L	18.0J	20000	20000	19600	20000	98	100	75-125	2	20	
Lead, Dissolved	ug/L	9.1J	1000	1000	996	1020	99	101	75-125	2	20	
Magnesium, Dissolved	ug/L	11500	20000	20000	31300	31600	99	101	75-125	1	20	
Manganese, Dissolved	ug/L	9.1	1000	1000	1000	1020	99	101	75-125	2	20	
Nickel, Dissolved	ug/L	9.6J	1000	1000	985	1000	98	99	75-125	2	20	
Potassium, Dissolved	ug/L	1380J	20000	20000	21500	21800	100	102	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1030	1050	103	105	75-125	2	20	
Silver, Dissolved	ug/L	<0.27	500	500	482	490	96	98	75-125	2	20	
Sodium, Dissolved	ug/L	12500	20000	20000	32000	32300	98	99	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	984	1000	98	100	75-125	2	20	
Vanadium, Dissolved	ug/L	6.8J	1000	1000	957	973	95	97	75-125	2	20	
Zinc, Dissolved	ug/L	5320	1000	1000	6160	6210	84	89	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 529371 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005

METHOD BLANK: 2873396 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	03/28/18 07:55	

LABORATORY CONTROL SAMPLE & LCSD: 2873397 2873398

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	42.1	106	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2873399 2873400

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	148	40	40	195	190	118	105	80-120	3	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2873401 2873402

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	164	40	40	203	206	99	104	80-120	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 529372 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2873403 | Matrix: Water
Associated Lab Samples: 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1.7J	5.0	1.4	03/28/18 10:28	

LABORATORY CONTROL SAMPLE & LCSD: 2873404 | 2873405

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.4	42.3	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2873406 | 2873407

Parameter	Units	10424295008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	154	40	40	198	200	109	113	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2873408 | 2873409

Parameter	Units	10424295009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	106	40	40	148	150	105	110	80-120	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528819 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10424295001, 10424295003, 10424295004, 10424295005, 10424295008, 10424295009, 10424295010

METHOD BLANK: 2869922 | Matrix: Water
Associated Lab Samples: 10424295001, 10424295003, 10424295004, 10424295005, 10424295008, 10424295009, 10424295010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/23/18 14:20	

LABORATORY CONTROL SAMPLE & LCSD: 2869923 | 2869924

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	980	968	98	97	80-120	1	10	

SAMPLE DUPLICATE: 2869925

Parameter	Units	10424295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	200	194	3	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528820 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10424295002, 10424295006, 10424295007, 10424295011

METHOD BLANK: 2869927 | Matrix: Water
Associated Lab Samples: 10424295002, 10424295006, 10424295007, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/26/18 13:45	

LABORATORY CONTROL SAMPLE & LCSD: 2869928 | 2869929

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	992	996	99	100	80-120	0	10	

SAMPLE DUPLICATE: 2869930

Parameter	Units	10424295002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	234	207	12	10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 104961 — Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D — Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295008, 10424295009, 10424295010

METHOD BLANK: 452614 — Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295008, 10424295009, 10424295010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/23/18 11:12	

LABORATORY CONTROL SAMPLE: 452615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 452617

Parameter	Units	10424295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.0070J	.2	0.13	62	75-125	M1

MATRIX SPIKE SAMPLE: 452619

Parameter	Units	10424295002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.063	31	75-125	M1

SAMPLE DUPLICATE: 452616

Parameter	Units	10424295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.0070J	0.0074J		20	

SAMPLE DUPLICATE: 452618

Parameter	Units	10424295002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 104997 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10424295006, 10424295007, 10424295011

METHOD BLANK: 452742 Matrix: Water
Associated Lab Samples: 10424295006, 10424295007, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	03/23/18 14:08	

LABORATORY CONTROL SAMPLE: 452743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 452745

Parameter	Units	2073063001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.041	21	75-125	M1

SAMPLE DUPLICATE: 452744

Parameter	Units	2073063001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528395 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2867729 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.14	1.2	0.14	03/21/18 14:47	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	03/21/18 14:47	
Sulfate	mg/L	<0.27	1.2	0.27	03/21/18 14:47	

LABORATORY CONTROL SAMPLE: 2867730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.0	96	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2867731 2867732

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.3	12.5	12.5	13.0	12.9	94	93	90-110	1	20	
Nitrate as N	mg/L	<0.0079	1	1	0.92	0.92	92	92	90-110	1	20	
Sulfate	mg/L	2.9	12.5	12.5	14.8	14.7	95	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2867733 2867734

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.4	12.5	12.5	12.9	12.9	92	93	90-110	0	20	
Nitrate as N	mg/L	1.0	1	1	1.9	1.9	88	88	90-110	0	20	M1
Sulfate	mg/L	3.7	12.5	12.5	15.4	15.4	94	94	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528835 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010

METHOD BLANK: 2870026 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/23/18 14:57	FS

LABORATORY CONTROL SAMPLE: 2870027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.99	99	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2870028 2870029

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.012J	1	1	0.96	0.95	94	94	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2870030 2870031

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.1	1	1	2.1	2.1	96	96	90-110	0	20	E

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 528836 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10424295011

METHOD BLANK: 2870033 | Matrix: Water
Associated Lab Samples: 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	03/23/18 15:17	FS

LABORATORY CONTROL SAMPLE: 2870034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2870035 2870036

Parameter	Units	7584181002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.40	1	1	1.3	1.3	89	89	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 529617 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 2874644 Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	03/30/18 10:05	

LABORATORY CONTROL SAMPLE: 2874645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874646 2874647

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	254	255	100	101	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2874648 2874649

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<15.8	250	250	253	260	99	102	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

QC Batch: 139478 — Analysis Method: SM 5310C
QC Batch Method: SM 5310C — Analysis Description: 5310C TOC
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

METHOD BLANK: 552402 — Matrix: Water
Associated Lab Samples: 10424295001, 10424295002, 10424295003, 10424295004, 10424295005, 10424295006, 10424295007, 10424295008, 10424295009, 10424295010, 10424295011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	03/28/18 15:48	

LABORATORY CONTROL SAMPLE: 552403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.4	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 552404 552405

Parameter	Units	10424295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.32J	25	25	26.1	25.6	103	101	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 552406 552407

Parameter	Units	10424295002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.35J	25	25	25.7	26.0	101	103	80-120	1	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H1	Analysis conducted outside the recognized method holding time.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424295001	**Thorson-GW-031918**	RSK 175	528910		
10424295002	**Atwood-GW-S-031918**	RSK 175	528910		
10424295003	**Atwood-GW-H-031918**	RSK 175	528910		
10424295004	**Stark-GW-031918**	RSK 175	528910		
10424295005	**Lashaw-GW-031918**	RSK 175	528910		
10424295006	**Asher-GW-032018**	RSK 175	528910		
10424295007	**Silva-GW-032018**	RSK 175	528910		
10424295008	**GWFD1-031918**	RSK 175	528910		
10424295009	**FD2-031918**	RSK 175	528910		
10424295010	**FD3-031918**	RSK 175	528910		
10424295011	**FD4-032018**	RSK 175	528910		
10424295001	**Thorson-GW-031918**	EPA 3010	528499	EPA 6010D	528604
10424295002	**Atwood-GW-S-031918**	EPA 3010	528499	EPA 6010D	528604
10424295003	**Atwood-GW-H-031918**	EPA 3010	528499	EPA 6010D	528604
10424295004	**Stark-GW-031918**	EPA 3010	528499	EPA 6010D	528604
10424295005	**Lashaw-GW-031918**	EPA 3010	528499	EPA 6010D	528604
10424295006	**Asher-GW-032018**	EPA 3010	528499	EPA 6010D	528604
10424295007	**Silva-GW-032018**	EPA 3010	528499	EPA 6010D	528604
10424295008	**GWFD1-031918**	EPA 3010	528499	EPA 6010D	528604
10424295009	**FD2-031918**	EPA 3010	528499	EPA 6010D	528604
10424295010	**FD3-031918**	EPA 3010	528499	EPA 6010D	528604
10424295011	**FD4-032018**	EPA 3010	528499	EPA 6010D	528604
10424295001	**Thorson-GW-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295002	**Atwood-GW-S-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295003	**Atwood-GW-H-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295004	**Stark-GW-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295005	**Lashaw-GW-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295006	**Asher-GW-032018**	EPA 7470A	528502	EPA 7470A	528610
10424295007	**Silva-GW-032018**	EPA 7470A	528502	EPA 7470A	528610
10424295008	**GWFD1-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295009	**FD2-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295010	**FD3-031918**	EPA 7470A	528502	EPA 7470A	528610
10424295011	**FD4-032018**	EPA 7470A	528502	EPA 7470A	528610
10424295001	**Thorson-GW-031918**	SM 2320B	529371		
10424295002	**Atwood-GW-S-031918**	SM 2320B	529371		
10424295003	**Atwood-GW-H-031918**	SM 2320B	529371		
10424295004	**Stark-GW-031918**	SM 2320B	529371		
10424295005	**Lashaw-GW-031918**	SM 2320B	529371		
10424295006	**Asher-GW-032018**	SM 2320B	529372		
10424295007	**Silva-GW-032018**	SM 2320B	529372		
10424295008	**GWFD1-031918**	SM 2320B	529372		
10424295009	**FD2-031918**	SM 2320B	529372		
10424295010	**FD3-031918**	SM 2320B	529372		
10424295011	**FD4-032018**	SM 2320B	529372		
10424295001	**Thorson-GW-031918**	SM 2540C	528819		
10424295002	**Atwood-GW-S-031918**	SM 2540C	528820		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424295003	Atwood-GW-H-031918	SM 2540C	528819		
10424295004	Stark-GW-031918	SM 2540C	528819		
10424295005	Lashaw-GW-031918	SM 2540C	528819		
10424295006	Asher-GW-032018	SM 2540C	528820		
10424295007	Silva-GW-032018	SM 2540C	528820		
10424295008	GWFD1-031918	SM 2540C	528819		
10424295009	FD2-031918	SM 2540C	528819		
10424295010	FD3-031918	SM 2540C	528819		
10424295011	FD4-032018	SM 2540C	528820		
10424295001	Thorson-GW-031918	SM 4500-S-2 D	104961		
10424295002	Atwood-GW-S-031918	SM 4500-S-2 D	104961		
10424295003	Atwood-GW-H-031918	SM 4500-S-2 D	104961		
10424295004	Stark-GW-031918	SM 4500-S-2 D	104961		
10424295005	Lashaw-GW-031918	SM 4500-S-2 D	104961		
10424295006	Asher-GW-032018	SM 4500-S-2 D	104997		
10424295007	Silva-GW-032018	SM 4500-S-2 D	104997		
10424295008	GWFD1-031918	SM 4500-S-2 D	104961		
10424295009	FD2-031918	SM 4500-S-2 D	104961		
10424295010	FD3-031918	SM 4500-S-2 D	104961		
10424295011	FD4-032018	SM 4500-S-2 D	104997		
10424295001	Thorson-GW-031918	EPA 300.0	528395		
10424295002	Atwood-GW-S-031918	EPA 300.0	528395		
10424295003	Atwood-GW-H-031918	EPA 300.0	528395		
10424295004	Stark-GW-031918	EPA 300.0	528395		
10424295005	Lashaw-GW-031918	EPA 300.0	528395		
10424295006	Asher-GW-032018	EPA 300.0	528395		
10424295007	Silva-GW-032018	EPA 300.0	528395		
10424295008	GWFD1-031918	EPA 300.0	528395		
10424295009	FD2-031918	EPA 300.0	528395		
10424295010	FD3-031918	EPA 300.0	528395		
10424295011	FD4-032018	EPA 300.0	528395		
10424295001	Thorson-GW-031918	EPA 353.2	528835		
10424295002	Atwood-GW-S-031918	EPA 353.2	528835		
10424295003	Atwood-GW-H-031918	EPA 353.2	528835		
10424295004	Stark-GW-031918	EPA 353.2	528835		
10424295005	Lashaw-GW-031918	EPA 353.2	528835		
10424295006	Asher-GW-032018	EPA 353.2	528835		
10424295007	Silva-GW-032018	EPA 353.2	528835		
10424295008	GWFD1-031918	EPA 353.2	528835		
10424295009	FD2-031918	EPA 353.2	528835		
10424295010	FD3-031918	EPA 353.2	528835		
10424295011	FD4-032018	EPA 353.2	528836		
10424295001	Thorson-GW-031918	EPA 410.4	529617	EPA 410.4	529850

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424295002	**Atwood-GW-S-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295003	**Atwood-GW-H-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295004	**Stark-GW-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295005	**Lashaw-GW-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295006	**Asher-GW-032018**	EPA 410.4	529617	EPA 410.4	529850
10424295007	**Silva-GW-032018**	EPA 410.4	529617	EPA 410.4	529850
10424295008	**GWFD1-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295009	**FD2-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295010	**FD3-031918**	EPA 410.4	529617	EPA 410.4	529850
10424295011	**FD4-032018**	EPA 410.4	529617	EPA 410.4	529850
10424295001	**Thorson-GW-031918**	SM 5310C	139478		
10424295002	**Atwood-GW-S-031918**	SM 5310C	139478		
10424295003	**Atwood-GW-H-031918**	SM 5310C	139478		
10424295004	**Stark-GW-031918**	SM 5310C	139478		
10424295005	**Lashaw-GW-031918**	SM 5310C	139478		
10424295006	**Asher-GW-032018**	SM 5310C	139478		
10424295007	**Silva-GW-032018**	SM 5310C	139478		
10424295008	**GWFD1-031918**	SM 5310C	139478		
10424295009	**FD2-031918**	SM 5310C	139478		
10424295010	**FD3-031918**	SM 5310C	139478		
10424295011	**FD4-032018**	SM 5310C	139478		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields r

WO# : 10424295

10424295

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz -
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	**Sulfide 4500**	Methane, Ethane, Ethene RSK175	COD 410.4	**Nitrate+Nitrite 353.2**	MS/MSD Requested		
1	Thorson-GW-031918	WT	G	3/19	1100	—	—	—	~~9~~ 27 JE	X	X	X		X				X	X	X	X	X	X	X	X	X	X		MS/MSD 48 hr hold (0
2	Atwood-GW-S-031918			↓	1200				27	X	X	X		X				X	X	X	X	X	X	X	X	X	X		MS/MSD 48 hr hold (00
3	Atwood-GW-H-031918				1300				9	X	X	X		X				X	X	X	X	X	X	X	X	X			48 hr hold (003
4	Stark-GW-031918				1400				9	X	X	X		X				X	X	X	X	X	X	X	X	X			004
5	Lashaw-GW-031918			↓	1500				9	X	X	X		X				X	X	X	X	X	X	X	X	X			005
6	Asher-GW-032018			3/20	1030				9	X	X	X		X				X	X	X	X	X	X	X	X	X			006
7	Silva-GW-032018			↓	1100				9	X	X	X		X				X	X	X	X	X	X	X	X	X			007
8	GWFD1-031918			3/19	1300				9	X	X	X		X				X	X	X	X	X	X	X	X	X			48 hr hold 008
9	FD2-031918				1330				9	X	X	X		X				X	X	X	X	X	X	X	X	X			009
10	FD3-031918			↓	1430				9	X	X	X		X				X	X	X	X	X	X	X	X	X			010
11	FD4-032018			3/20	1000				9	X	X	X		X				X	X	X	X	X	X	X	X	X			011
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 3/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424295
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO₃ ☑ H₂SO₄ ☑ NaOH Zn Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample #1-2: 3/3 3/3 3/3; 3-11: 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	~~N/A~~ MD 3/21/18	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10424295 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 3/21/2018 **Results Requested By:** 4/4/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

WO# : 2073043
2073043

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	Thorson-GW-031918	RQS	3/19/2018 11:00	10424295001	Water	3	X	RQS
2	Atwood-GW-S-031918	RQS	3/19/2018 12:00	10424295002	Water	3	X	RQS
3	Atwood-GW-H-031918	PS	3/19/2018 13:00	10424295003	Water	1	X	
4	Stark-GW-031918	PS	3/19/2018 14:00	10424295004	Water	1	X	
5	Lashaw-GW-031918	PS	3/19/2018 15:00	10424295005	Water	1	X	
6	Asher-GW-032018	PS	3/20/2018 10:30	10424295006	Water	1	X	
7	Silva-GW-032018	PS	3/20/2018 11:00	10424295007	Water	1	X	
8	GWFD1-031918	PS	3/19/2018 13:00	10424295008	Water	1	X	
9	FD2-031918	PS	3/19/2018 13:30	10424295009	Water	1	X	
10	FD3-031918	PS	3/19/2018 14:30	10424295010	Water	1	X	
11	FD4-032018	PS	3/20/2018 10:00	10424295011	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	3/21/18 1615		
2	Fed EX	3-22-18 0830	[signature] /Pace	3-22-18
3				

Comments: 0830

Cooler Temperature on Receipt 0.7 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Page 66 of 69

Pace Analytical

Sample Condition Upon Re WO#:2073043

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje PM: CMM Due Date: 04/04/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒Yes ☐No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/22/18 CMM

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☒Yes	☐No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☐Yes	☒No	☐N/A	5
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	6
Sufficient Volume:	☒Yes	☐No	☐N/A	7
Correct Containers Used:	☒Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	9
Sample Labels match COC:	☒Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	14
Trip Blank Present:	☐Yes	☒No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ______________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Chain of Custody

WO#:12106176
PM: HRZ Due Date: 04/05/18
CLIENT: Pace WA

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10424295 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 3/21/2018 Results Requested By: 4/4/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	Thorson-GW-031918	RQS	3/19/2018 11:00	10424295001	Water	6	X	RQS
2	Atwood-GW-S-031918	RQS	3/19/2018 12:00	10424295002	Water	6	X	RQS
3	Atwood-GW-H-031918	PS	3/19/2018 13:00	10424295003	Water	2	X	
4	Stark-GW-031918	PS	3/19/2018 14:00	10424295004	Water	2	X	
5	Lashaw-GW-031918	PS	3/19/2018 15:00	10424295005	Water	2	X	
6	Asher-GW-032018	PS	3/20/2018 10:30	10424295006	Water	2	X	
7	Silva-GW-032018	PS	3/20/2018 11:00	10424295007	Water	2	X	
8	GWFD1-031918	PS	3/19/2018 13:00	10424295008	Water	2	X	
9	FD2-031918	PS	3/19/2018 13:30	10424295009	Water	2	X	
10	FD3-031918	PS	3/19/2018 14:30	10424295010	Water	2	X	
11	FD4-032018	PS	3/20/2018 10:00	10424295011	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	3/21/18 1645	[signature]	3-21-18 1900
2	[signature]	3-21-18 2300	[signature]	3/22/18 800
3				

Comments

Cooler Temperature on Receipt 2.6 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #: WO# : 12106176 PM: HRZ Due Date: 04/05/18 CLIENT: Pace WA

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.3 Cooler Temp Corrected °C: 2.6 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3-21-18 DL

Comments: M3/22/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 3/22/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424306

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424306001	**SG01-GW-032018**	Water	03/20/18 11:45	03/21/18 10:20
10424306002	**SG02-GW-032018**	Water	03/20/18 12:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424306001	**SG01-GW-032018**	EPA 8260B	AEZ	83	PASI-M
10424306002	**SG02-GW-032018**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Sample: SG01-GW-032018 **Lab ID: 10424306001** Collected: 03/20/18 11:45 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:27	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 18:27	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 18:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 18:27	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:27	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:27	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:27	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 18:27	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 18:27	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 18:27	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:27	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:27	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:27	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:27	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 18:27	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 18:27	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:27	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:27	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 18:27	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 18:27	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 18:27	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 18:27	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 18:27	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:27	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 18:27	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 18:27	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 18:27	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 18:27	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 18:27	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:27	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:27	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:27	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:27	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 18:27	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 18:27	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:27	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 18:27	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 18:27	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 18:27	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 18:27	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Sample: SG01-GW-032018 **Lab ID: 10424306001** Collected: 03/20/18 11:45 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 18:27	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 18:27	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:27	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:27	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 18:27	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 18:27	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 18:27	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:27	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:27	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 18:27	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:27	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 18:27	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 18:27	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 18:27	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 18:27	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:27	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:27	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 18:27	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:27	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:27	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 18:27	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:27	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:27	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:27	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 18:27	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:27	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:27	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:27	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 18:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 18:27	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 18:27	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 18:27	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Sample: SG02-GW-032018 **Lab ID: 10424306002** Collected: 03/20/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:51	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 18:51	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 18:51	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 18:51	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:51	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:51	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:51	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 18:51	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 18:51	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 18:51	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:51	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:51	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:51	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:51	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 18:51	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 18:51	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:51	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:51	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 18:51	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 18:51	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 18:51	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 18:51	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 18:51	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:51	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 18:51	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 18:51	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 18:51	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 18:51	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 18:51	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:51	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:51	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:51	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:51	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 18:51	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 18:51	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:51	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 18:51	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 18:51	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 18:51	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 18:51	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Sample: SG02-GW-032018 **Lab ID: 10424306002** Collected: 03/20/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 18:51	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 18:51	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:51	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:51	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 18:51	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 18:51	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 18:51	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:51	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:51	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 18:51	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:51	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 18:51	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 18:51	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 18:51	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 18:51	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:51	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:51	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 18:51	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:51	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:51	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 18:51	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:51	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:51	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:51	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 18:51	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:51	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:51	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:51	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 18:51	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 18:51	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/30/18 18:51	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/30/18 18:51	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

QC Batch: 529866 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424306001, 10424306002

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424306001, 10424306002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424306001, 10424306002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424306

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424306001	**SG01-GW-032018**	EPA 8260B	529866		
10424306002	**SG02-GW-032018**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D[ocument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu[st be completed accurately.]

WO#: 10424306

10424306

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*	WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	SG01-GW-032018	WT	G	3/20	1145	—	—	—	3				X				X												001
2	SG02-GW-032018	↓	↓	↓	1200	—	—	—	3				X				X												002
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/20/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#:10424306
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. no MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424307

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424307001	**GWFD1-031918**	Water	03/19/18 13:00	03/21/18 10:20
10424307002	**FD2-031918**	Water	03/19/18 13:30	03/21/18 10:20
10424307003	**FD3-031918**	Water	03/19/18 14:30	03/21/18 10:20
10424307004	**FD4-032018**	Water	03/20/18 10:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424307001	**GWFD1-031918**	EPA 8260B	AEZ	83	PASI-M
10424307002	**FD2-031918**	EPA 8260B	AEZ	83	PASI-M
10424307003	**FD3-031918**	EPA 8260B	AEZ	83	PASI-M
10424307004	**FD4-032018**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424307003	**FD3-031918**					
EPA 8260B	Carbon tetrachloride	1.2	ug/L	1.0	03/24/18 10:08	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: GWFD1-031918 **Lab ID: 10424307001** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 16:29	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 16:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 16:29	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:29	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:29	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 16:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 16:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 16:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:29	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:29	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 16:29	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 16:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:29	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 16:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 16:29	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 16:29	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 16:29	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 16:29	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:29	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 16:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 16:29	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 16:29	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 16:29	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 16:29	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:29	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:29	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:29	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:29	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 16:29	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 16:29	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:29	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 16:29	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 16:29	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 16:29	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 16:29	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: GWFD1-031918 **Lab ID: 10424307001** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 16:29	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 16:29	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:29	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:29	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 16:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 16:29	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 16:29	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:29	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:29	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 16:29	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:29	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 16:29	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 16:29	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 16:29	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 16:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:29	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:29	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 16:29	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:29	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:29	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 16:29	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:29	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:29	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:29	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 16:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:29	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:29	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 16:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 16:29	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		03/30/18 16:29	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 16:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD2-031918 **Lab ID: 10424307002** Collected: 03/19/18 13:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 16:52	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 16:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 16:52	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:52	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:52	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 16:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 16:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 16:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:52	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:52	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 16:52	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 16:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:52	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 16:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 16:52	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 16:52	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 16:52	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 16:52	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:52	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 16:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 16:52	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 16:52	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 16:52	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 16:52	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:52	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:52	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:52	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:52	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 16:52	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 16:52	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:52	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 16:52	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 16:52	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 16:52	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 16:52	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD2-031918 **Lab ID: 10424307002** Collected: 03/19/18 13:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 16:52	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 16:52	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:52	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:52	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 16:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 16:52	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 16:52	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:52	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:52	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 16:52	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:52	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 16:52	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 16:52	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 16:52	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 16:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:52	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:52	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 16:52	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:52	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:52	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 16:52	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:52	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:52	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:52	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 16:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:52	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:52	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 16:52	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 16:52	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/30/18 16:52	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/30/18 16:52	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD3-031918 **Lab ID: 10424307003** Collected: 03/19/18 14:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 10:08	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/24/18 10:08	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/24/18 10:08	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/24/18 10:08	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 10:08	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/24/18 10:08	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/24/18 10:08	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 10:08	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/24/18 10:08	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/24/18 10:08	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/24/18 10:08	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 10:08	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/24/18 10:08	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/24/18 10:08	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/24/18 10:08	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/24/18 10:08	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 10:08	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/24/18 10:08	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/24/18 10:08	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/24/18 10:08	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/24/18 10:08	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/24/18 10:08	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 10:08	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/24/18 10:08	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/24/18 10:08	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/24/18 10:08	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/24/18 10:08	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/24/18 10:08	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 10:08	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 10:08	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		03/24/18 10:08	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/24/18 10:08	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/24/18 10:08	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/24/18 10:08	75-15-0	
Carbon tetrachloride	**1.2**	ug/L	1.0	0.20	1		03/24/18 10:08	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/24/18 10:08	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/24/18 10:08	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/24/18 10:08	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD3-031918 **Lab ID: 10424307003** Collected: 03/19/18 14:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/24/18 10:08	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/24/18 10:08	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/24/18 10:08	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/24/18 10:08	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/24/18 10:08	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/24/18 10:08	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/24/18 10:08	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/24/18 10:08	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/24/18 10:08	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/24/18 10:08	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/24/18 10:08	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/24/18 10:08	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/24/18 10:08	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/24/18 10:08	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/24/18 10:08	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 10:08	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/24/18 10:08	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/24/18 10:08	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 10:08	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/24/18 10:08	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/24/18 10:08	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/24/18 10:08	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/24/18 10:08	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/24/18 10:08	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/24/18 10:08	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		03/24/18 10:08	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/24/18 10:08	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/24/18 10:08	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/24/18 10:08	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1		03/24/18 10:08	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD4-032018 **Lab ID: 10424307004** Collected: 03/20/18 10:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:14	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 19:14	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 19:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 19:14	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:14	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:14	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:14	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 19:14	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 19:14	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 19:14	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 19:14	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 19:14	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 19:14	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:14	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 19:14	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 19:14	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:14	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:14	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 19:14	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 19:14	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 19:14	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 19:14	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 19:14	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:14	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 19:14	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 19:14	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 19:14	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 19:14	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 19:14	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:14	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 19:14	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:14	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 19:14	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 19:14	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 19:14	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:14	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 19:14	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 19:14	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 19:14	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 19:14	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Sample: FD4-032018 **Lab ID: 10424307004** Collected: 03/20/18 10:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 19:14	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 19:14	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 19:14	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 19:14	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 19:14	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 19:14	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 19:14	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:14	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:14	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 19:14	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 19:14	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 19:14	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 19:14	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 19:14	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 19:14	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:14	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 19:14	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 19:14	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:14	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:14	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 19:14	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:14	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:14	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:14	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 19:14	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:14	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 19:14	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:14	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 19:14	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 19:14	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		03/30/18 19:14	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 19:14	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

QC Batch: 528793 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424307003

METHOD BLANK: 2869762 | Matrix: Water
Associated Lab Samples: 10424307003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/24/18 02:38	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/24/18 02:38	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/24/18 02:38	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,1-Dichloroethene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,1-Dichloropropene	ug/L	<0.18	1.0	0.18	03/24/18 02:38	MN
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/24/18 02:38	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/24/18 02:38	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/24/18 02:38	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/24/18 02:38	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/24/18 02:38	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/24/18 02:38	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/24/18 02:38	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/24/18 02:38	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/24/18 02:38	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/24/18 02:38	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/24/18 02:38	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/24/18 02:38	
Acetone	ug/L	<8.8	20.0	8.8	03/24/18 02:38	
Acrolein	ug/L	<4.8	10.0	4.8	03/24/18 02:38	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/24/18 02:38	
Benzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Bromodichloromethane	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN
Bromoform	ug/L	<1.0	4.0	1.0	03/24/18 02:38	
Bromomethane	ug/L	<1.5	4.0	1.5	03/24/18 02:38	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/24/18 02:38	
Carbon tetrachloride	ug/L	<0.20	1.0	0.20	03/24/18 02:38	MN

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

METHOD BLANK: 2869762 Matrix: Water
Associated Lab Samples: 10424307003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Chloroethane	ug/L	<0.44	1.0	0.44	03/24/18 02:38	
Chloroform	ug/L	<0.46	1.0	0.46	03/24/18 02:38	
Chloromethane	ug/L	<1.1	4.0	1.1	03/24/18 02:38	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/24/18 02:38	
cis-1,3-Dichloropropene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Dibromochloromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Dibromomethane	ug/L	<0.50	1.0	0.50	03/24/18 02:38	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/24/18 02:38	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/24/18 02:38	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/24/18 02:38	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/24/18 02:38	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/24/18 02:38	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/24/18 02:38	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Naphthalene	ug/L	<0.42	1.0	0.42	03/24/18 02:38	
o-Xylene	ug/L	<0.11	0.50	0.11	03/24/18 02:38	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
Styrene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/24/18 02:38	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/24/18 02:38	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/24/18 02:38	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/24/18 02:38	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/24/18 02:38	
Toluene	ug/L	<0.17	0.50	0.17	03/24/18 02:38	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/24/18 02:38	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	03/24/18 02:38	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/24/18 02:38	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/24/18 02:38	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/24/18 02:38	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/24/18 02:38	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/24/18 02:38	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/24/18 02:38	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/24/18 02:38	
4-Bromofluorobenzene (S)	%.	99	75-125		03/24/18 02:38	
Toluene-d8 (S)	%.	98	75-125		03/24/18 02:38	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	98	75-125	
1,1,2-Trichloroethane	ug/L	20	21.7	109	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	20.9	104	75-125	
1,1-Dichloroethene	ug/L	20	19.5	97	73-125	
1,1-Dichloropropene	ug/L	20	20.7	104	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.2	96	72-130	
1,2,3-Trichloropropane	ug/L	20	20.1	101	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.7	99	75-125	
1,2-Dichlorobenzene	ug/L	20	20.9	105	75-125	
1,2-Dichloroethane	ug/L	20	19.6	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.3	103	75-125	
1,2-Dichloropropane	ug/L	20	21.5	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,3-Dichlorobenzene	ug/L	20	20.3	102	75-125	
1,3-Dichloropropane	ug/L	20	21.3	107	75-125	
1,4-Dichlorobenzene	ug/L	20	20.8	104	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	416	104	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.4	97	64-130	
2,2-Dichloropropane	ug/L	20	17.7	89	68-129	
2-Butanone (MEK)	ug/L	100	104	104	65-126	
2-Chlorotoluene	ug/L	20	19.6	98	75-125	
2-Hexanone	ug/L	100	111	111	75-134	
4-Chlorotoluene	ug/L	20	20.8	104	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	75-131	
Acetone	ug/L	100	125	125	68-150	
Acrolein	ug/L	200	210	105	63-149	
Acrylonitrile	ug/L	200	211	106	75-125	
Benzene	ug/L	20	20.2	101	75-125	
Bromobenzene	ug/L	20	20.8	104	75-125	
Bromochloromethane	ug/L	20	20.6	103	75-125	
Bromodichloromethane	ug/L	20	20.8	104	75-125	
Bromoform	ug/L	20	21.2	106	70-125	
Bromomethane	ug/L	20	17.0	85	30-145	
Carbon disulfide	ug/L	20	20.5	102	67-125	
Carbon tetrachloride	ug/L	20	19.4	97	75-125	
Chlorobenzene	ug/L	20	21.0	105	75-125	
Chloroethane	ug/L	20	19.9	100	73-131	
Chloroform	ug/L	20	20.1	100	75-125	
Chloromethane	ug/L	20	20.0	100	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.8	104	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

LABORATORY CONTROL SAMPLE: 2869763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	106	75-125	
Dibromomethane	ug/L	20	20.9	104	75-125	
Dichlorodifluoromethane	ug/L	20	19.7	99	64-127	
Dichlorofluoromethane	ug/L	20	19.3	96	75-125	
Diisopropyl ether	ug/L	20	20.4	102	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.9	105	75-125	
Ethylbenzene	ug/L	20	20.7	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.2	96	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.5	102	72-125	
n-Butylbenzene	ug/L	20	20.5	102	75-125	
n-Propylbenzene	ug/L	20	20.5	103	75-125	
Naphthalene	ug/L	20	19.0	95	61-136	
o-Xylene	ug/L	20	21.0	105	75-125	
p-Isopropyltoluene	ug/L	20	20.8	104	75-125	
sec-Butylbenzene	ug/L	20	20.7	104	75-125	
Styrene	ug/L	20	20.9	105	75-125	
tert-Amylmethyl ether	ug/L	20	20.7	104	75-125	
tert-Butyl Alcohol	ug/L	200	212	106	75-125	
tert-Butylbenzene	ug/L	20	20.4	102	75-125	
Tetrachloroethene	ug/L	20	21.2	106	75-125	
Tetrahydrofuran	ug/L	200	277	139	64-150	
Toluene	ug/L	20	20.5	103	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.5	103	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.9	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	45.9	92	57-126	
Trichloroethene	ug/L	20	20.9	104	75-125	
Trichlorofluoromethane	ug/L	20	19.8	99	74-126	
Vinyl acetate	ug/L	20	19.4	97	72-129	
Vinyl chloride	ug/L	20	20.9	104	71-130	
Xylene (Total)	ug/L	60	63.3	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	21.2	20.9	106	104	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	21.3	21.3	107	106	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	18.7	18.8	94	94	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	20.8	20.2	104	101	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	22.2	22.1	111	111	75-136	0	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	20.6	20.8	102	103	75-125	1	30	
1,1-Dichloroethene	ug/L	<1.0	20	20	19.9	20.1	99	100	75-127	1	30	
1,1-Dichloropropene	ug/L	<1.0	20	20	21.3	21.2	107	106	75-129	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	18.8	19.1	94	96	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	19.3	17.9	97	90	75-125	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	18.9	18.9	94	94	69-131	0	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.3	103	102	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	50.0	51.0	100	102	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	19.1	18.5	96	93	75-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.2	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	18.8	18.9	94	95	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	41.9	41.7	104	104	75-125	1	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	20.9	20.3	105	102	75-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	20.3	20.3	101	102	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	20.8	20.5	104	102	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	20.4	20.3	102	102	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	419	424	105	106	67-128	1	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	20.0	20.0	100	100	65-150	0	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	18.1	17.8	91	89	65-136	2	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	87.5	88.7	87	89	59-125	1	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.7	19.4	98	97	73-126	1	30	
2-Hexanone	ug/L	<5.0	100	100	102	98.9	102	99	68-138	3	30	
4-Chlorotoluene	ug/L	<0.50	20	20	20.7	20.6	103	103	75-125	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	99.4	95.7	99	96	73-125	4	30	
Acetone	ug/L	<20.0	100	100	130	128	130	128	75-150	1	30	
Acrolein	ug/L	<10.0	200	200	190	185	95	93	53-150	3	30	
Acrylonitrile	ug/L	<10.0	200	200	191	187	95	93	69-127	2	30	
Benzene	ug/L	<0.50	20	20	19.7	19.7	98	99	74-125	0	30	
Bromobenzene	ug/L	<0.50	20	20	20.3	20.1	102	100	75-125	1	30	
Bromochloromethane	ug/L	<1.0	20	20	19.7	19.7	99	98	75-125	0	30	
Bromodichloromethane	ug/L	<1.0	20	20	20.5	20.3	103	101	75-125	1	30	
Bromoform	ug/L	<4.0	20	20	20.9	20.9	104	104	68-125	0	30	
Bromomethane	ug/L	<4.0	20	20	17.9	18.9	89	95	37-149	6	30	
Carbon disulfide	ug/L	<1.0	20	20	21.2	21.2	106	106	66-139	0	30	
Carbon tetrachloride	ug/L	<1.0	20	20	20.1	20.6	100	103	75-127	3	30	
Chlorobenzene	ug/L	<0.50	20	20	21.0	21.0	105	105	75-125	0	30	
Chloroethane	ug/L	<1.0	20	20	18.9	18.9	94	95	73-134	0	30	
Chloroform	ug/L	<1.0	20	20	19.4	19.5	97	98	71-125	0	30	
Chloromethane	ug/L	<4.0	20	20	19.5	19.9	97	100	58-133	2	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	20.7	20.6	102	102	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	19.6	19.2	98	96	71-125	2	30	
Dibromochloromethane	ug/L	<0.50	20	20	21.0	20.8	105	104	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869767 2869768

Parameter	Units	10423998001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	20.1	19.8	100	99	75-125	1	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	19.1	19.4	96	97	70-150	2	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	18.0	18.1	90	90	75-126	1	30	
Diisopropyl ether	ug/L	<1.0	20	20	19.3	19.4	96	97	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	19.8	19.7	99	98	74-125	1	30	
Ethylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	20.3	22.2	102	111	60-150	9	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	21.5	21.0	108	105	75-125	2	30	
m&p-Xylene	ug/L	<1.0	40	40	43.2	42.4	108	106	75-125	2	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	19.1	19.2	96	96	75-125	0	30	
Methylene Chloride	ug/L	<4.0	20	20	19.4	19.4	97	97	72-125	0	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.6	21.0	103	105	73-140	2	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.8	20.7	104	103	75-126	1	30	
Naphthalene	ug/L	<1.0	20	20	18.5	18.1	92	91	61-136	2	30	
o-Xylene	ug/L	<0.50	20	20	21.1	20.5	106	103	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	20.7	20.8	103	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.50	20	20	21.3	21.2	107	106	75-132	1	30	
Styrene	ug/L	<0.50	20	20	21.1	20.6	105	103	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	19.5	19.3	98	96	71-125	1	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	214	192	107	96	72-130	11	30	
tert-Butylbenzene	ug/L	<0.50	20	20	20.4	20.6	102	103	75-126	1	30	
Tetrachloroethene	ug/L	<0.50	20	20	21.9	21.2	110	106	75-125	3	30	
Tetrahydrofuran	ug/L	<10.0	200	200	290	286	145	143	75-150	2	30	
Toluene	ug/L	<0.50	20	20	20.6	20.1	103	100	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	21.2	21.1	106	106	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	20.6	20.4	103	102	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	42.8	42.7	86	85	57-125	0	30	
Trichloroethene	ug/L	6.3	20	20	26.8	26.7	103	102	75-125	1	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	19.1	19.4	95	97	75-135	2	30	
Vinyl acetate	ug/L	<10.0	20	20	17.1	16.8	86	84	57-136	2	30	
Vinyl chloride	ug/L	ND	20	20	20.3	20.6	102	103	74-141	1	30	
Xylene (Total)	ug/L	<1.5	60	60	64.4	62.9	107	105	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						98	100	75-125			
4-Bromofluorobenzene (S)	%.						100	100	75-125			
Toluene-d8 (S)	%.						100	101	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

QC Batch: 529866 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424307001, 10424307002, 10424307004

METHOD BLANK: 2875924 | Matrix: Water
Associated Lab Samples: 10424307001, 10424307002, 10424307004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424307001, 10424307002, 10424307004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424307

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424307001	**GWFD1-031918**	EPA 8260B	529866		
10424307002	**FD2-031918**	EPA 8260B	529866		
10424307003	**FD3-031918**	EPA 8260B	528793		
10424307004	**FD4-032018**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

WO# : 10424307

10424307

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		Pace Project No./Lab I.D.
1	GWFD1-031918	WT	G	3/19	1300	—	—	—	3				X				X												001
2	FD2-031918	↓	↓	↓	1330	—	—	—	3				X				X												002
3	FD3-031918	↓	↓	↓	1430	—	—	—	3				X				X												003
4	FD4-032018	↓	↓	3/20	1000	—	—	—	3				X				X												004
5	Trip Blank	WT	G	—	—	—	—	—	2				X				X												
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10424307
PM: JMG **Due Date: 04/04/18**
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. No MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	~~Yes~~	☑ No (MD 3/21/18)		12. No trip blanks included
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s… …rm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424308

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424308001	**Silva-GW-032018**	Water	03/20/18 11:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424308001	**Silva-GW-032018**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Sample: Silva-GW-032018 **Lab ID: 10424308001** Collected: 03/20/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:38	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 19:38	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 19:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 19:38	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:38	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:38	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:38	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 19:38	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 19:38	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 19:38	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 19:38	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 19:38	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 19:38	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:38	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 19:38	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 19:38	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 19:38	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:38	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 19:38	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 19:38	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 19:38	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 19:38	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 19:38	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:38	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 19:38	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 19:38	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 19:38	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 19:38	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 19:38	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:38	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 19:38	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:38	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 19:38	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 19:38	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 19:38	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:38	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 19:38	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 19:38	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 19:38	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 19:38	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424308

Sample: Silva-GW-032018 **Lab ID: 10424308001** Collected: 03/20/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 19:38	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 19:38	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 19:38	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 19:38	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 19:38	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 19:38	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 19:38	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:38	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 19:38	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 19:38	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 19:38	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 19:38	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 19:38	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 19:38	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 19:38	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 19:38	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 19:38	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 19:38	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 19:38	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:38	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 19:38	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 19:38	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:38	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 19:38	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 19:38	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 19:38	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 19:38	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 19:38	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 19:38	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 19:38	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 19:38	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/30/18 19:38	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

QC Batch: 529866 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424308001

METHOD BLANK: 2875924 | Matrix: Water
Associated Lab Samples: 10424308001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424308001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424308

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424308001	**Silva-GW-032018**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reques

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO# : 10424308

10424308

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***	WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Silva-GW-032018	WT	G	3/20	1100	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/20/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424308
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. No MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14. 2 of 3 vials have <6mm headspace
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4
Time: 1100	put in cooler	1.4
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424309

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424309001	**Stark-GW-031918**	Water	03/19/18 14:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424309001	**Stark-GW-031918**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Sample: Stark-GW-031918 **Lab ID: 10424309001** Collected: 03/19/18 14:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 17:16	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 17:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 17:16	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:16	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:16	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:16	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 17:16	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 17:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 17:16	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 17:16	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 17:16	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 17:16	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:16	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 17:16	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 17:16	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:16	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:16	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 17:16	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 17:16	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 17:16	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 17:16	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 17:16	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:16	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 17:16	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 17:16	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 17:16	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 17:16	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 17:16	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:16	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 17:16	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:16	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 17:16	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 17:16	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 17:16	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:16	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 17:16	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 17:16	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 17:16	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 17:16	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Sample: Stark-GW-031918 **Lab ID: 10424309001** Collected: 03/19/18 14:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 17:16	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 17:16	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 17:16	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 17:16	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 17:16	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 17:16	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 17:16	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:16	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:16	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 17:16	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 17:16	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 17:16	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 17:16	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 17:16	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 17:16	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:16	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 17:16	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 17:16	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:16	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:16	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 17:16	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:16	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:16	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:16	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 17:16	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:16	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 17:16	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:16	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 17:16	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		03/30/18 17:16	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 17:16	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/30/18 17:16	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

QC Batch: 529866 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424309001

METHOD BLANK: 2875924 | Matrix: Water
Associated Lab Samples: 10424309001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424309001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424309

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424309001	**Stark-GW-031918**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

WO# : 10424309

10424309

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		Residual Chlorine (Y/N) / Pace Project No./ Lab I.D.
1	Stark-GW-031918	WT	G	3/19	1400	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	4.4	Y	Y	Y
*Field filtered by client							2.8			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: F-MN-L-210-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424309

PM: JMG **Due Date: 04/04/18**

CLIENT: UPRR_CH2M

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑Yes ☐No **Seals Intact?** ☑Yes ☐No

Packing Material: ☑Bubble Wrap ☑Bubble Bags ☐None ☐Other:

Temp Blank? ☑Yes ☐No

Thermometer Used: ☐151401163 ☑G87A9155100842

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐Yes ☐No ☑NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑Yes	☐No		1.
Chain of Custody Filled Out?	☑Yes	☐No		2.
Chain of Custody Relinquished?	☑Yes	☐No		3.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☑Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		6.
Rush Turn Around Time Requested?	☐Yes	☑No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐Yes	☑No		8. No MS/MSD
Correct Containers Used?	☑Yes	☐No		9.
-Pace Containers Used?	☑Yes	☐No		
Containers Intact?	☑Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☑N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☑No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☑No	☐N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424310

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424310001	**Atwood-GW-S-031918**	Water	03/19/18 12:00	03/21/18 10:20
10424310002	**Atwood-GW-H-031918**	Water	03/19/18 13:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424310001	**Atwood-GW-S-031918**	EPA 8260B	AEZ	83	PASI-M
10424310002	**Atwood-GW-H-031918**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.
- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Sample: Atwood-GW-S-031918 **Lab ID: 10424310001** Collected: 03/19/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 16:05	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 16:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 16:05	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:05	75-35-4	M1
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:05	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 16:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 16:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 16:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:05	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:05	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 16:05	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 16:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 16:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:05	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 16:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 16:05	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 16:05	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 16:05	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 16:05	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:05	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 16:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 16:05	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 16:05	67-64-1	M1
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 16:05	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 16:05	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:05	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:05	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:05	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 16:05	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 16:05	74-83-9	R1
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 16:05	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:05	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 16:05	75-00-3	R1
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 16:05	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 16:05	74-87-3	R1
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 16:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Sample: Atwood-GW-S-031918 **Lab ID: 10424310001** Collected: 03/19/18 12:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 16:05	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 16:05	75-71-8	R1
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 16:05	75-43-4	R1
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:05	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 16:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 16:05	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 16:05	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:05	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 16:05	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 16:05	109-99-9	M0
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 16:05	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 16:05	79-01-6	M1
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	75-69-4	R1
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 16:05	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 16:05	75-01-4	R1
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 16:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 16:05	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 16:05	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 16:05	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 16:05	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:05	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 16:05	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 16:05	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:05	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 16:05	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 16:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 16:05	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 16:05	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 16:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 16:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 16:05	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		03/30/18 16:05	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/30/18 16:05	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Sample: Atwood-GW-H-031918 **Lab ID: 10424310002** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 17:40	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 17:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 17:40	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:40	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:40	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 17:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 17:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 17:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 17:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 17:40	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 17:40	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:40	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 17:40	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 17:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 17:40	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:40	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 17:40	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 17:40	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 17:40	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 17:40	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 17:40	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:40	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 17:40	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 17:40	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 17:40	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 17:40	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 17:40	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:40	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 17:40	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:40	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 17:40	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 17:40	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 17:40	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:40	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 17:40	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 17:40	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 17:40	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 17:40	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Sample: Atwood-GW-H-031918 **Lab ID: 10424310002** Collected: 03/19/18 13:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 17:40	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 17:40	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 17:40	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 17:40	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 17:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 17:40	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 17:40	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:40	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 17:40	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 17:40	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 17:40	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 17:40	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 17:40	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 17:40	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 17:40	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 17:40	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 17:40	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 17:40	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 17:40	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:40	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 17:40	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 17:40	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:40	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 17:40	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 17:40	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 17:40	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 17:40	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 17:40	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 17:40	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/30/18 17:40	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		03/30/18 17:40	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/30/18 17:40	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

QC Batch: 529866 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424310001, 10424310002

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424310001, 10424310002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424310001, 10424310002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424310

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424310001	**Atwood-GW-S-031918**	EPA 8260B	529866		
10424310002	**Atwood-GW-H-031918**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

WO#: 10424310

10424310

Section A
Required Client Information:

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500
Spokane, WA 99201
Email:
Phone: Fax:
Requested Due Date: *10 Day Standard*

Section B
Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: Freeman WA-Grain Handling Facility
Project #: 1497

Section C
Invoice Information:

Attention: Anne Walsh
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: *36447 / 4*

Regulatory Agency

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Atwood-GW-S-031918	WT	G	3/19	1200	—	—	—	9				X				X										X		MS/MSD 001
2	Atwood-GW-H-031918	↓	↓	↓	1300	—	—	—	3				X				X												002
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 3/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10424310

PM: JMG **Due Date: 04/04/18**

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of t]his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424311

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424311001	**Thorson-GW-031918**	Water	03/19/18 11:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424311001	**Thorson-GW-031918**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
    - Tetrahydrofuran
- MS (Lab ID: 2875928)
    - Tetrahydrofuran
- MSD (Lab ID: 2875927)
    - Tetrahydrofuran
- MSD (Lab ID: 2875929)
    - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
    - 1,1-Dichloroethene
    - Acetone
    - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
    - Bromomethane
    - Chloroethane
    - Chloromethane
    - Dichlorodifluoromethane
    - Dichlorofluoromethane
    - Trichlorofluoromethane
    - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Sample: Thorson-GW-031918 **Lab ID: 10424311001** Collected: 03/19/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 15:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 15:41	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 15:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 15:41	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 15:41	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 15:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 15:41	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 15:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 15:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 15:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 15:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 15:41	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 15:41	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 15:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 15:41	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 15:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 15:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 15:41	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 15:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 15:41	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 15:41	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 15:41	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 15:41	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 15:41	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 15:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 15:41	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 15:41	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 15:41	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 15:41	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 15:41	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 15:41	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 15:41	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 15:41	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 15:41	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 15:41	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 15:41	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 15:41	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 15:41	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 15:41	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 15:41	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Sample: Thorson-GW-031918 **Lab ID: 10424311001** Collected: 03/19/18 11:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 15:41	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 15:41	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 15:41	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 15:41	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 15:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 15:41	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 15:41	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 15:41	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 15:41	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 15:41	109-99-9	M0
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 15:41	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 15:41	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 15:41	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 15:41	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 15:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 15:41	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 15:41	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 15:41	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 15:41	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 15:41	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 15:41	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 15:41	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 15:41	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 15:41	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 15:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 15:41	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 15:41	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 15:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 15:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		03/30/18 15:41	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		03/30/18 15:41	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 15:41	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

QC Batch: 529866 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424311001

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424311001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

METHOD BLANK: 2875924 Matrix: Water

Associated Lab Samples: 10424311001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424311

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424311

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424311001	**Thorson-GW-031918**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

WO# : 10424311

10424311

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***	WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Y/N Analyses Test	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Thorson-GW-031918	WT	G	3/19	1100	—	—	—	9	JE			X				X										X		MS/MSD 001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	JE / CH2M	3/20/18		Mett Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: JE

DATE Signed: 3/19/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: F-MN-L-210-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424311
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks present
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compl this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424312001	**Lashaw-GW-031918**	Water	03/19/18 15:00	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424312001	**Lashaw-GW-031918**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424312001	**Lashaw-GW-031918**					
EPA 8260B	Carbon tetrachloride	0.82	ug/L	0.50	03/30/18 18:04	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- LCS (Lab ID: 2875925)
  - Tetrahydrofuran
- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
- LCS (Lab ID: 2875925)
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Sample: Lashaw-GW-031918 **Lab ID: 10424312001** Collected: 03/19/18 15:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:04	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 18:04	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 18:04	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 18:04	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:04	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:04	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:04	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 18:04	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 18:04	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 18:04	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:04	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:04	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:04	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:04	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 18:04	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 18:04	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 18:04	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:04	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 18:04	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 18:04	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 18:04	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 18:04	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 18:04	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:04	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 18:04	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 18:04	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 18:04	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 18:04	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 18:04	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:04	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:04	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:04	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 18:04	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 18:04	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 18:04	75-15-0	
Carbon tetrachloride	**0.82**	ug/L	0.50	0.20	1		03/30/18 18:04	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 18:04	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 18:04	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 18:04	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 18:04	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424312

Sample: Lashaw-GW-031918 **Lab ID: 10424312001** Collected: 03/19/18 15:00 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 18:04	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 18:04	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 18:04	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:04	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 18:04	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 18:04	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 18:04	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:04	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 18:04	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 18:04	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 18:04	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 18:04	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 18:04	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 18:04	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 18:04	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 18:04	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 18:04	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 18:04	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 18:04	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:04	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 18:04	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 18:04	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:04	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 18:04	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 18:04	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 18:04	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 18:04	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 18:04	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 18:04	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-125		1		03/30/18 18:04	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		03/30/18 18:04	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 18:04	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

QC Batch: 529866 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424312001

METHOD BLANK: 2875924 | Matrix: Water
Associated Lab Samples: 10424312001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424312001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424312

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424312001	**Lashaw-GW-031918**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

WO# : 10424312

10424312

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	***10 Day Standard***

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Lashaw-GW-031918	WT	G	3/19	1500	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short **hold** analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/19/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10424312
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. NO MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC?	☑ Yes	☐ No		12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. NO trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina complian[ce] ... [fo]rm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424313

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

REPORT OF LABORATORY ANALYSIS

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424313001	**Asher-GW-032018**	Water	03/20/18 10:30	03/21/18 10:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424313001	**Asher-GW-032018**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 529866

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2875925)
    - Tetrahydrofuran
- MS (Lab ID: 2875926)
    - Tetrahydrofuran
- MS (Lab ID: 2875928)
    - Tetrahydrofuran
- MSD (Lab ID: 2875927)
    - Tetrahydrofuran
- MSD (Lab ID: 2875929)
    - Tetrahydrofuran

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 529866

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2875925)
    - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 529866

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10424310001,10424311001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2875926)
  - Tetrahydrofuran
- MS (Lab ID: 2875928)
  - Tetrahydrofuran
- MSD (Lab ID: 2875927)
  - Tetrahydrofuran
- MSD (Lab ID: 2875929)
  - Tetrahydrofuran

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2875926)
  - 1,1-Dichloroethene
  - Acetone
  - Trichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2875927)
  - Bromomethane
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Trichlorofluoromethane
  - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Sample: Asher-GW-032018 **Lab ID: 10424313001** Collected: 03/20/18 10:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 20:02	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		03/30/18 20:02	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/30/18 20:02	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		03/30/18 20:02	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 20:02	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 20:02	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 20:02	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		03/30/18 20:02	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	1.0	0.18	1		03/30/18 20:02	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		03/30/18 20:02	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		03/30/18 20:02	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		03/30/18 20:02	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 20:02	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		03/30/18 20:02	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		03/30/18 20:02	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		03/30/18 20:02	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		03/30/18 20:02	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 20:02	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		03/30/18 20:02	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		03/30/18 20:02	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		03/30/18 20:02	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		03/30/18 20:02	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		03/30/18 20:02	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 20:02	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		03/30/18 20:02	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		03/30/18 20:02	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		03/30/18 20:02	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		03/30/18 20:02	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		03/30/18 20:02	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 20:02	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 20:02	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		03/30/18 20:02	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		03/30/18 20:02	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		03/30/18 20:02	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		03/30/18 20:02	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		03/30/18 20:02	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		03/30/18 20:02	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		03/30/18 20:02	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		03/30/18 20:02	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		03/30/18 20:02	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10424313

Sample: Asher-GW-032018 **Lab ID: 10424313001** Collected: 03/20/18 10:30 Received: 03/21/18 10:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		03/30/18 20:02	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		03/30/18 20:02	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		03/30/18 20:02	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		03/30/18 20:02	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		03/30/18 20:02	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		03/30/18 20:02	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		03/30/18 20:02	91-20-3	
Styrene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 20:02	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		03/30/18 20:02	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		03/30/18 20:02	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		03/30/18 20:02	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		03/30/18 20:02	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		03/30/18 20:02	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		03/30/18 20:02	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		03/30/18 20:02	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		03/30/18 20:02	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		03/30/18 20:02	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		03/30/18 20:02	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		03/30/18 20:02	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 20:02	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		03/30/18 20:02	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		03/30/18 20:02	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		03/30/18 20:02	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		03/30/18 20:02	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		03/30/18 20:02	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/30/18 20:02	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		03/30/18 20:02	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		03/30/18 20:02	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		03/30/18 20:02	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		03/30/18 20:02	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		03/30/18 20:02	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/30/18 20:02	460-00-4	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

QC Batch: 529866 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10424313001

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424313001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	03/30/18 14:31	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	03/30/18 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	03/30/18 14:31	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	03/30/18 14:31	
1,2,4-Trichlorobenzene	ug/L	<0.18	1.0	0.18	03/30/18 14:31	MN
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	03/30/18 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	03/30/18 14:31	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	03/30/18 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	03/30/18 14:31	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	03/30/18 14:31	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	03/30/18 14:31	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	03/30/18 14:31	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	03/30/18 14:31	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	03/30/18 14:31	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
2-Hexanone	ug/L	<2.5	5.0	2.5	03/30/18 14:31	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	03/30/18 14:31	
Acetone	ug/L	<8.8	20.0	8.8	03/30/18 14:31	
Acrolein	ug/L	<4.8	10.0	4.8	03/30/18 14:31	
Acrylonitrile	ug/L	<4.9	10.0	4.9	03/30/18 14:31	
Benzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Bromobenzene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Bromochloromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
Bromoform	ug/L	<1.0	4.0	1.0	03/30/18 14:31	
Bromomethane	ug/L	<1.5	4.0	1.5	03/30/18 14:31	
Carbon disulfide	ug/L	<0.37	1.0	0.37	03/30/18 14:31	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

METHOD BLANK: 2875924 Matrix: Water
Associated Lab Samples: 10424313001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Chloroethane	ug/L	<0.44	1.0	0.44	03/30/18 14:31	
Chloroform	ug/L	<0.46	1.0	0.46	03/30/18 14:31	
Chloromethane	ug/L	<1.1	4.0	1.1	03/30/18 14:31	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	03/30/18 14:31	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	03/30/18 14:31	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	03/30/18 14:31	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	03/30/18 14:31	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	03/30/18 14:31	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	03/30/18 14:31	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	03/30/18 14:31	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	03/30/18 14:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
m&p-Xylene	ug/L	<0.24	1.0	0.24	03/30/18 14:31	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
Methylene Chloride	ug/L	<1.2	4.0	1.2	03/30/18 14:31	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Naphthalene	ug/L	<0.42	1.0	0.42	03/30/18 14:31	
o-Xylene	ug/L	<0.11	0.50	0.11	03/30/18 14:31	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	03/30/18 14:31	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
Styrene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	03/30/18 14:31	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	03/30/18 14:31	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/30/18 14:31	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	03/30/18 14:31	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	03/30/18 14:31	
Toluene	ug/L	<0.17	0.50	0.17	03/30/18 14:31	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	03/30/18 14:31	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	03/30/18 14:31	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	03/30/18 14:31	
Trichloroethene	ug/L	<0.18	0.40	0.18	03/30/18 14:31	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	03/30/18 14:31	
Vinyl acetate	ug/L	<1.5	10.0	1.5	03/30/18 14:31	
Vinyl chloride	ug/L	<0.096	0.20	0.096	03/30/18 14:31	
Xylene (Total)	ug/L	<0.24	1.5	0.24	03/30/18 14:31	
1,2-Dichloroethane-d4 (S)	%.	98	75-125		03/30/18 14:31	
4-Bromofluorobenzene (S)	%.	96	75-125		03/30/18 14:31	
Toluene-d8 (S)	%.	99	75-125		03/30/18 14:31	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	105	72-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	21.8	109	73-125	
1,1-Dichloropropene	ug/L	20	21.5	107	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	20.8	104	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.7	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.0	105	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	54.0	108	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	102	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.7	104	75-125	
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	75-125	
1,3-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	22.5	113	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	422	105	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.0	105	64-130	
2,2-Dichloropropane	ug/L	20	20.5	102	68-129	
2-Butanone (MEK)	ug/L	100	103	103	65-126	
2-Chlorotoluene	ug/L	20	21.5	108	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	75-131	
Acetone	ug/L	100	135	135	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	218	109	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	21.0	105	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	20	18.9	94	70-125	
Bromomethane	ug/L	20	19.4	97	30-145	
Carbon disulfide	ug/L	20	20.6	103	67-125	
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	21.7	108	75-125	
Chloroethane	ug/L	20	21.0	105	73-131	
Chloroform	ug/L	20	20.3	102	75-125	
Chloromethane	ug/L	20	20.8	104	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

LABORATORY CONTROL SAMPLE: 2875925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.2	101	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	19.5	97	64-127	
Dichlorofluoromethane	ug/L	20	20.3	101	75-125	
Diisopropyl ether	ug/L	20	21.0	105	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.7	103	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	105	75-125	
m&p-Xylene	ug/L	40	45.7	114	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	20.6	103	72-125	
n-Butylbenzene	ug/L	20	21.3	107	75-125	
n-Propylbenzene	ug/L	20	20.9	105	75-125	
Naphthalene	ug/L	20	19.7	98	61-136	
o-Xylene	ug/L	20	22.5	113	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	22.9	115	75-125	
Styrene	ug/L	20	20.2	101	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	224	112	75-125	
tert-Butylbenzene	ug/L	20	22.1	111	75-125	
Tetrachloroethene	ug/L	20	21.5	108	75-125	
Tetrahydrofuran	ug/L	200	310	155	64-150	CH,L3
Toluene	ug/L	20	21.3	106	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6	97	57-126	
Trichloroethene	ug/L	20	22.8	114	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	19.7	99	72-129	
Vinyl chloride	ug/L	20	20.3	101	71-130	
Xylene (Total)	ug/L	60	68.2	114	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	22.7	20.6	114	103	75-125	10	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	24.2	21.7	121	108	75-129	11	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	21.9	20.0	109	100	75-125	9	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	22.1	20.0	110	100	75-125	10	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	25.9	23.5	129	117	75-136	10	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	24.3	21.5	121	108	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	26.3	23.7	132	118	75-127	10	30	M1
1,1-Dichloropropene	ug/L	<0.18	20	20	25.4	22.9	127	114	75-129	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	22.7	20.4	113	102	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	20.7	18.9	103	95	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	23.4	20.7	117	103	69-131	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	22.5	20.5	112	102	71-125	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	54.1	51.5	108	103	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	21.8	20.1	109	101	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	22.2	20.2	111	101	75-125	9	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	21.4	19.6	107	98	69-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	47.6	42.2	119	106	75-125	12	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	22.4	20.4	112	102	75-125	10	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	24.3	21.9	121	109	75-125	10	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	24.3	22.0	121	110	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	23.7	21.2	119	106	75-125	11	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	24.5	22.1	122	111	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	457	408	114	102	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	27.4	23.3	137	116	65-150	16	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	23.8	21.7	119	108	65-136	9	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	100	94.9	100	95	59-125	5	30	
2-Chlorotoluene	ug/L	<0.20	20	20	23.2	21.0	116	105	73-126	10	30	
2-Hexanone	ug/L	<2.5	100	100	100	94.7	100	95	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	23.8	21.6	119	108	75-125	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	114	106	114	106	73-125	7	30	
Acetone	ug/L	<8.8	100	100	164	150	164	150	75-150	9	30	M1
Acrolein	ug/L	<4.8	200	200	236	220	118	110	53-150	7	30	
Acrylonitrile	ug/L	<4.9	200	200	217	203	109	101	69-127	7	30	
Benzene	ug/L	<0.13	20	20	23.5	21.0	117	105	74-125	11	30	
Bromobenzene	ug/L	<0.16	20	20	22.4	19.8	112	99	75-125	12	30	
Bromochloromethane	ug/L	<0.38	20	20	23.4	21.1	117	106	75-125	10	30	
Bromodichloromethane	ug/L	<0.20	20	20	22.5	20.1	112	100	75-125	11	30	
Bromoform	ug/L	<1.0	20	20	20.0	18.6	100	93	68-125	7	30	
Bromomethane	ug/L	<1.5	20	20	16.8	25.1	84	125	37-149	39	30	R1
Carbon disulfide	ug/L	<0.37	20	20	25.9	22.6	129	113	66-139	13	30	
Carbon tetrachloride	ug/L	<0.20	20	20	24.8	22.4	124	112	75-127	10	30	
Chlorobenzene	ug/L	<0.14	20	20	23.8	21.7	119	108	75-125	9	30	
Chloroethane	ug/L	<0.44	20	20	16.1	22.7	81	114	73-134	34	30	R1
Chloroform	ug/L	<0.46	20	20	22.4	20.0	112	100	71-125	11	30	
Chloromethane	ug/L	<1.1	20	20	16.6	23.0	83	115	58-133	32	30	R1
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	23.8	21.2	119	106	75-125	12	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	21.1	19.0	105	95	71-125	10	30	
Dibromochloromethane	ug/L	<0.13	20	20	21.7	19.8	109	99	75-125	9	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875926 2875927

Parameter	Units	10424310001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	21.8	19.6	109	98	75-125	10	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	16.3	22.7	82	113	70-150	33	30	R1
Dichlorofluoromethane	ug/L	<0.38	20	20	15.7	22.5	78	112	75-126	36	30	R1
Diisopropyl ether	ug/L	<0.12	20	20	22.8	20.7	114	104	66-131	9	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	21.4	19.7	107	98	74-125	9	30	
Ethylbenzene	ug/L	<0.14	20	20	24.0	22.2	120	111	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	26.3	23.2	132	116	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	23.1	21.6	115	108	75-125	7	30	
m&p-Xylene	ug/L	<0.24	40	40	49.8	44.8	125	112	75-125	11	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	22.9	20.9	114	104	75-125	9	30	
Methylene Chloride	ug/L	<1.2	20	20	21.4	19.6	107	98	72-125	9	30	
n-Butylbenzene	ug/L	<0.13	20	20	24.8	21.8	124	109	73-140	13	30	
n-Propylbenzene	ug/L	<0.12	20	20	23.0	20.9	115	104	75-126	10	30	
Naphthalene	ug/L	<0.42	20	20	20.3	19.2	101	96	61-136	5	30	
o-Xylene	ug/L	<0.11	20	20	24.6	21.7	123	109	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	24.2	21.2	121	106	73-133	13	30	
sec-Butylbenzene	ug/L	<0.12	20	20	25.9	22.9	130	114	75-132	12	30	
Styrene	ug/L	<0.14	20	20	21.8	20.0	109	100	71-125	9	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	22.3	20.6	112	103	71-125	8	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	251	227	126	114	72-130	10	30	
tert-Butylbenzene	ug/L	<0.15	20	20	24.8	21.8	124	109	75-126	13	30	
Tetrachloroethene	ug/L	<0.16	20	20	24.4	22.2	122	111	75-125	9	30	
Tetrahydrofuran	ug/L	<4.3	200	200	372	335	186	168	75-150	10	30	CH,M0
Toluene	ug/L	<0.17	20	20	23.8	21.2	119	106	74-125	12	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.7	21.0	119	105	75-125	12	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	21.8	19.4	109	97	70-125	12	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.7	46.4	99	93	57-125	7	30	
Trichloroethene	ug/L	<0.18	20	20	25.1	22.8	126	114	75-125	10	30	M1
Trichlorofluoromethane	ug/L	<0.13	20	20	17.5	24.5	88	123	75-135	33	30	R1
Vinyl acetate	ug/L	<1.5	20	20	21.1	19.7	106	98	57-136	7	30	
Vinyl chloride	ug/L	<0.096	20	20	16.5	23.1	83	116	74-141	33	30	R1
Xylene (Total)	ug/L	<0.24	60	60	74.4	66.5	124	111	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						98	98	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	21.1	20.8	106	104	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	22.0	21.7	110	109	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.8	19.8	99	99	75-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	20.0	19.8	100	99	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	23.7	23.2	118	116	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.9	21.8	109	109	75-125	0	30	
1,1-Dichloroethene	ug/L	<0.18	20	20	23.9	23.6	120	118	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	22.8	22.7	114	114	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	19.8	20.2	99	101	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	18.5	19.1	93	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	20.4	20.1	102	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	20.5	20.4	102	102	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	49.1	49.9	98	100	61-127	2	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.9	19.8	99	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	20.4	20.3	102	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	19.7	19.4	98	97	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.41	40	40	43.2	42.5	108	106	75-125	1	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	20.3	20.5	102	102	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	22.0	21.9	110	110	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.7	21.7	108	108	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	21.5	21.0	108	105	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	22.3	22.2	111	111	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	395	413	99	103	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	22.5	22.4	112	112	65-150	0	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	21.8	21.4	109	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.4	95.6	91	96	59-125	4	30	
2-Chlorotoluene	ug/L	<0.20	20	20	21.4	21.1	107	106	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	89.1	92.2	89	92	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	22.0	110	110	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	101	103	101	103	73-125	1	30	
Acetone	ug/L	<8.8	100	100	150	150	150	150	75-150	0	30	
Acrolein	ug/L	<4.8	200	200	212	215	106	107	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	200	99	100	69-127	1	30	
Benzene	ug/L	<0.13	20	20	21.3	21.3	106	107	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	20.1	20.4	101	102	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	21.1	21.2	106	106	75-125	0	30	
Bromodichloromethane	ug/L	<0.20	20	20	20.4	20.4	102	102	75-125	0	30	
Bromoform	ug/L	<1.0	20	20	18.2	18.2	91	91	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	25.0	25.0	125	125	37-149	0	30	
Carbon disulfide	ug/L	<0.37	20	20	22.6	22.2	112	110	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	22.8	22.7	114	113	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	21.8	21.5	109	107	75-125	2	30	
Chloroethane	ug/L	<0.44	20	20	21.9	21.6	110	108	73-134	2	30	
Chloroform	ug/L	<0.46	20	20	20.3	20.5	102	103	71-125	1	30	
Chloromethane	ug/L	<1.1	20	20	22.2	21.3	111	107	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.20	20	20	21.6	21.4	108	107	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	19.1	19.2	96	96	71-125	0	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.8	19.6	99	98	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2875928 2875929

Parameter	Units	10424311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.8	19.5	99	98	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	21.8	21.6	109	108	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	21.7	21.3	109	107	75-126	2	30	
Diisopropyl ether	ug/L	<0.12	20	20	20.8	20.7	104	104	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.7	19.7	98	99	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	22.5	22.5	113	112	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	22.1	21.5	111	107	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	21.6	21.6	108	108	75-125	0	30	
m&p-Xylene	ug/L	<0.24	40	40	45.6	45.7	114	114	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	20.6	21.0	103	105	75-125	2	30	
Methylene Chloride	ug/L	<1.2	20	20	19.9	19.7	99	99	72-125	1	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.6	21.1	108	105	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	21.0	20.8	105	104	75-126	1	30	
Naphthalene	ug/L	<0.42	20	20	18.9	19.4	94	97	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	21.9	22.7	110	113	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	21.1	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.12	20	20	23.1	22.9	116	114	75-132	1	30	
Styrene	ug/L	<0.14	20	20	20.1	20.0	101	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	20.4	20.5	102	102	71-125	0	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	205	214	103	107	72-130	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.3	21.7	111	109	75-126	3	30	
Tetrachloroethene	ug/L	<0.16	20	20	22.1	22.2	111	111	75-125	0	30	
Tetrahydrofuran	ug/L	<4.3	200	200	335	336	167	168	75-150	0	30	CH,M0
Toluene	ug/L	<0.17	20	20	21.4	21.5	107	107	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	21.5	21.1	108	106	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	19.1	19.3	96	97	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	44.3	44.5	89	89	57-125	1	30	
Trichloroethene	ug/L	<0.18	20	20	22.9	22.9	114	115	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.7	23.4	119	117	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.2	19.5	96	97	57-136	1	30	
Vinyl chloride	ug/L	<0.096	20	20	22.3	22.2	112	111	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	67.6	68.4	113	114	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						98	96	75-125			
Toluene-d8 (S)	%.						99	98	75-125			

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10424313

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10424313

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424313001	**Asher-GW-032018**	EPA 8260B	529866		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Do[cument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b[e completed accurately]

WO#: 10424313

10424313

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Asher-GW-032018	WT	G	3/20	1030	–	–	–	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	3/20/18	1530	[signature] Pace	3/21/18	1020	2.8	Y	Y	Y
*Field filtered by client							4.4			
							1.4			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/20/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10424313
PM: JMG Due Date: 04/04/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 1617 / 1639 / 1628

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.6, 4.2, 1.2 **Cooler Temp Corrected (°C):** 2.8, 4.4, 1.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** MD 3/21/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☐ Yes	☑ No		8. No MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14. 1 of 3 vials has <6mm headspace
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1040	Temp: 2.6, 4.2, 1.2	Corrected Temp: 2.8, 4.4, 1.4
Time: 1100	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance ... rm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 04, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
1(612)607-6390
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman Grain Handling
Pace Project No.:	10424983

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10424983001	**SV-114**	Air	03/09/18 10:00	03/27/18 10:15

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10424983001	**SV-114**	TO-15	NCK	2	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10424983001	**SV-114**					
TO-15	Carbon tetrachloride	6.6	ug/m3	0.099	04/03/18 15:16	
TO-15	Chloroform	0.69	ug/m3	0.077	04/03/18 15:16	

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PROJECT NARRATIVE

Project:	1497 Freeman Grain Handling
Pace Project No.:	10424983

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: UPRR_CH2M/Jacobs
Date: April 04, 2018

General Information:
1 sample was analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Sample: SV-114 **Lab ID: 10424983001** Collected: 03/09/18 10:00 Received: 03/27/18 10:15 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Carbon tetrachloride	**6.6**	ug/m3	0.099	0.051	1.55		04/03/18 15:16	56-23-5	
Chloroform	**0.69**	ug/m3	0.077	0.033	1.55		04/03/18 15:16	67-66-3	

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QUALITY CONTROL DATA

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

QC Batch: 530387 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10424983001

METHOD BLANK: 2878827 Matrix: Air
Associated Lab Samples: 10424983001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/m3	<0.033	0.064	0.033	04/03/18 14:41	
Chloroform	ug/m3	<0.021	0.050	0.021	04/03/18 14:41	

LABORATORY CONTROL SAMPLE: 2878828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	.64	0.69	108	56-138	
Chloroform	ug/m3	.5	0.55	111	66-130	

SAMPLE DUPLICATE: 2879733

Parameter	Units	10423364001 Result	Dup Result	RPD	Max RPD	Qualifiers
Carbon tetrachloride	ug/m3	0.51	0.50	1	25	
Chloroform	ug/m3	0.70	0.68	2	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman Grain Handling
Pace Project No.:	10424983

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman Grain Handling
Pace Project No.: 10424983

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10424983001	**SV-114**	TO-15	530387		

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AIR: CHAIN-OF-CUSTODY

The Chain-of-Custody is a LEGAL DOCUMENT. All relev

WO#: 10424983

10424983

31003

Page: 1 of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Suite #500
Email To:	steve.demus@ch2m.com
Phone:	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Ochsner
Copy To:	Steve Demus, Lindsey Rauman, David Hedson, UPRR@gtd.com
Purchase Order No.:	
Project Name:	Freeman Grain Handling
Project Number:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company Name:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote Reference:	#158938
Pace Project Manager/Sales Rep.	Jennifer Gross
Pace Profile #:	30447/4

Program: UST / Superfund / Emissions / Clean Air Act / Voluntary Clean Up / Dry Clean / RCRA / Other___

Location of Sampling by State: WA

Reporting Units: ug/m³ X mg/m³___ PPBV X PPMV___ Other___

Report Level II.___ III.___ IV.___ Other___

Section D Required Client Information

AIR SAMPLE ID — Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start DATE (2018)	Composite Start TIME	Composite End/Grab DATE (2018)	Composite End/Grab TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	~~TO-14~~	TO-15 Full List VOCs (~~BTEX~~ 524)	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	SV-114	6LC	0	3/8	1130	3/9	1000	28	2.5	960	0459						X				001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jonathan E / CH2M	3/26/18	1700	Ern Pace	3/27/18	1015

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
—	Y/N (N)	Y/N (N)	Y/N (Y)
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: Jonathan E

DATE Signed (MM / DD / YY): 03/08/2018

ORIGINAL

Pace Analytical	Document Name: **Air Sample Condition Upon Receipt**	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: **F-MN-A-106-rev.14**	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #:

WO# : 10424983

PM: CB **Due Date:** 04/03/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 774759638640

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): — **Corrected Temp (°C):** — **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** — **Date & Initials of Person Examining Contents:** EYL 3/27/18

Type of ice Received ☐ Blue ☐ Wet ☒ None

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.

Samples Received: Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
SV-114			-4	+5					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Chris Bremer **Date:** 3/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: UPRR_CH2M/Jacobs
Phone: 916.280.033

Lab Project Number: 10424983
Project Name: 1497 Freeman Grain Handling

Lab Sample No: 10424983001
Client Sample ID: SV-114

ProjSampleNum: 10424983001
Matrix: Air

Date Collected: 03/09/18 10:00
Date Received: 03/27/18 10:15

Air

TO-15

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Carbon tetrachloride	1	ppbv	0.015	1.55	04/03/18 15:16 NCK	56-23-5	
Chloroform	0.14	ppbv	0.016	1.55	04/03/18 15:16 NCK	67-66-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Client: UPRR_CH2M/Jacobs
Phone: 916.280.033

Lab Project Number: 10424983
Project Name: 1497 Freeman Grain Handling

PARAMETER FOOTNOTES

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 05, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 31, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Subslab Soil Gas and Soil
Pace Project No.:	10425720

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
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Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10425720001	**SV108-S-0-033018**	Solid	03/30/18 09:50	03/31/18 09:15
10425720002	**SV108-S-3-033018**	Solid	03/30/18 10:05	03/31/18 09:15
10425720003	**SV109-S-0-033018**	Solid	03/30/18 10:20	03/31/18 09:15
10425720004	**SV109-S-3-033018**	Solid	03/30/18 10:35	03/31/18 09:15
10425720005	**SV112-S-0-033018**	Solid	03/30/18 10:50	03/31/18 09:15
10425720006	**SV112-S-3-033018**	Solid	03/30/18 11:05	03/31/18 09:15
10425720007	**SV113-S-0-033018**	Solid	03/30/18 11:10	03/31/18 09:15
10425720008	**SV113-S-1.5-033018**	Solid	03/30/18 11:15	03/31/18 09:15
10425720009	**SV114-S-3-033018**	Solid	03/30/18 12:15	03/31/18 09:15
10425720010	**FD01-033018**	Solid	03/30/18 08:00	03/31/18 09:15
10425720011	**FD02-033018**	Solid	03/30/18 08:30	03/31/18 09:15
10425720012	**Trip Blank**	Solid	03/30/18 00:00	03/31/18 09:15

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Minneapolis, MN 55414
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SAMPLE ANALYTE COUNT

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10425720001	**SV108-S-0-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720002	**SV108-S-3-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720003	**SV109-S-0-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720004	**SV109-S-3-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720005	**SV112-S-0-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720006	**SV112-S-3-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720007	**SV113-S-0-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720008	**SV113-S-1.5-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720009	**SV114-S-3-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720010	**FD01-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720011	**FD02-033018**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10425720012	**Trip Blank**	EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10425720001	**SV108-S-0-033018**					
ASTM D2974	Percent Moisture	23.4	%	0.10	04/02/18 11:04	
EPA 8260B	1,2-Dichloroethane	3.1J	ug/kg	5.1	04/03/18 18:28	
10425720002	**SV108-S-3-033018**					
ASTM D2974	Percent Moisture	22.3	%	0.10	04/02/18 11:04	
EPA 8260B	1,2-Dichloroethane	7.5	ug/kg	5.8	04/03/18 18:47	
EPA 8260B	Methylene Chloride	5.3J	ug/kg	28.9	04/03/18 18:47	
EPA 8260B	Tetrachloroethene	0.92J	ug/kg	5.8	04/03/18 18:47	
10425720003	**SV109-S-0-033018**					
ASTM D2974	Percent Moisture	24.8	%	0.10	04/02/18 11:04	
EPA 8260B	Acetone	20.9J	ug/kg	53.4	04/03/18 19:06	
10425720004	**SV109-S-3-033018**					
ASTM D2974	Percent Moisture	27.6	%	0.10	04/02/18 11:04	
10425720005	**SV112-S-0-033018**					
ASTM D2974	Percent Moisture	27.6	%	0.10	04/02/18 11:04	
EPA 8260B	Acetone	25.9J	ug/kg	54.4	04/03/18 19:44	
10425720006	**SV112-S-3-033018**					
ASTM D2974	Percent Moisture	25.5	%	0.10	04/02/18 11:05	
EPA 8260B	Acetone	15.3J	ug/kg	53.1	04/03/18 20:03	
EPA 8260B	Carbon tetrachloride	1.1J	ug/kg	4.2	04/03/18 20:03	
10425720007	**SV113-S-0-033018**					
ASTM D2974	Percent Moisture	25.8	%	0.10	04/02/18 12:13	
EPA 8260B	Acetone	24.1J	ug/kg	57.4	04/03/18 20:22	
10425720008	**SV113-S-1.5-033018**					
ASTM D2974	Percent Moisture	23.9	%	0.10	04/02/18 12:13	
EPA 8260B	Benzene	1.0J	ug/kg	4.1	04/03/18 20:41	
10425720009	**SV114-S-3-033018**					
ASTM D2974	Percent Moisture	23.9	%	0.10	04/02/18 12:13	
10425720010	**FD01-033018**					
ASTM D2974	Percent Moisture	26.2	%	0.10	04/02/18 12:14	
EPA 8260B	Benzene	0.64J	ug/kg	4.0	04/03/18 21:00	
10425720011	**FD02-033018**					
ASTM D2974	Percent Moisture	23.7	%	0.10	04/02/18 12:14	

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PROJECT NARRATIVE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M/Jacobs
Date: April 05, 2018

General Information:
12 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035 Low with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 530449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10425720009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2879122)
  - 1,1,1-Trichloroethane
  - 1,1,2,2-Tetrachloroethane
  - 1,1,2-Trichloroethane
  - 1,1,2-Trichlorotrifluoroethane
  - 1,1-Dichloroethene
  - 1,2-Dibromoethane (EDB)
  - 1,2-Dichloroethane
  - 2-Butanone (MEK)
  - 2-Hexanone

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PROJECT NARRATIVE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M/Jacobs
Date: April 05, 2018

QC Batch: 530449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10425720009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- 4-Methyl-2-pentanone (MIBK)
- Acetone
- Bromodichloromethane
- Bromomethane
- Carbon tetrachloride
- Chloroethane
- Chloroform
- Chloromethane
- Dibromochloromethane
- Dichlorodifluoromethane
- Methyl-tert-butyl ether
- Tetrahydrofuran
- Trichlorofluoromethane
- Vinyl acetate
- Vinyl chloride
- cis-1,2-Dichloroethene
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene

- MSD (Lab ID: 2879123)
  - 1,1,1-Trichloroethane
  - 1,1,2,2-Tetrachloroethane
  - 1,1,2-Trichlorotrifluoroethane
  - 1,1-Dichloroethene
  - 2-Butanone (MEK)
  - 2-Hexanone
  - 4-Methyl-2-pentanone (MIBK)
  - Acetone
  - Chloroform
  - Methyl-tert-butyl ether
  - Tetrahydrofuran
  - Vinyl acetate
  - cis-1,3-Dichloropropene
  - trans-1,3-Dichloropropene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2879123)
  - Chloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Hexachloro-1,3-butadiene
  - Trichlorofluoromethane
  - Vinyl chloride

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PROJECT NARRATIVE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Method: **EPA 8260B**
Description: 8260B MSV 5035 Low Level
Client: UPRR_CH2M/Jacobs
Date: April 05, 2018

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV108-S-0-033018 **Lab ID: 10425720001** Collected: 03/30/18 09:50 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**23.4**	%	0.10	0.10	1		04/02/18 11:04		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.95**	ug/kg	5.1	0.95	1	04/03/18 14:51	04/03/18 18:28	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.69**	ug/kg	5.1	0.69	1	04/03/18 14:51	04/03/18 18:28	79-34-5	
1,1,2-Trichloroethane	**<0.88**	ug/kg	5.1	0.88	1	04/03/18 14:51	04/03/18 18:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.92**	ug/kg	5.1	0.92	1	04/03/18 14:51	04/03/18 18:28	76-13-1	
1,1-Dichloroethane	**<0.91**	ug/kg	5.1	0.91	1	04/03/18 14:51	04/03/18 18:28	75-34-3	
1,1-Dichloroethene	**<0.72**	ug/kg	5.1	0.72	1	04/03/18 14:51	04/03/18 18:28	75-35-4	
1,2,4-Trichlorobenzene	**<2.0**	ug/kg	5.1	2.0	1	04/03/18 14:51	04/03/18 18:28	120-82-1	
1,2,4-Trimethylbenzene	**<0.25**	ug/kg	5.1	0.25	1	04/03/18 14:51	04/03/18 18:28	95-63-6	
1,2-Dibromoethane (EDB)	**<0.99**	ug/kg	5.1	0.99	1	04/03/18 14:51	04/03/18 18:28	106-93-4	
1,2-Dichlorobenzene	**<0.80**	ug/kg	5.1	0.80	1	04/03/18 14:51	04/03/18 18:28	95-50-1	
1,2-Dichloroethane	**3.1J**	ug/kg	5.1	0.89	1	04/03/18 14:51	04/03/18 18:28	107-06-2	
1,3,5-Trimethylbenzene	**<0.61**	ug/kg	5.1	0.61	1	04/03/18 14:51	04/03/18 18:28	108-67-8	
1,3-Dichlorobenzene	**<0.66**	ug/kg	5.1	0.66	1	04/03/18 14:51	04/03/18 18:28	541-73-1	
1,4-Dichlorobenzene	**<0.73**	ug/kg	5.1	0.73	1	04/03/18 14:51	04/03/18 18:28	106-46-7	
2-Butanone (MEK)	**<3.9**	ug/kg	25.3	3.9	1	04/03/18 14:51	04/03/18 18:28	78-93-3	
2-Hexanone	**<2.9**	ug/kg	25.3	2.9	1	04/03/18 14:51	04/03/18 18:28	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.3**	ug/kg	25.3	3.3	1	04/03/18 14:51	04/03/18 18:28	108-10-1	
Acetone	**<10.5**	ug/kg	63.3	10.5	1	04/03/18 14:51	04/03/18 18:28	67-64-1	
Benzene	**<0.70**	ug/kg	5.1	0.70	1	04/03/18 14:51	04/03/18 18:28	71-43-2	
Bromodichloromethane	**<0.80**	ug/kg	5.1	0.80	1	04/03/18 14:51	04/03/18 18:28	75-27-4	
Bromoform	**<3.3**	ug/kg	25.3	3.3	1	04/03/18 14:51	04/03/18 18:28	75-25-2	
Bromomethane	**<4.4**	ug/kg	25.3	4.4	1	04/03/18 14:51	04/03/18 18:28	74-83-9	
Carbon tetrachloride	**<0.70**	ug/kg	5.1	0.70	1	04/03/18 14:51	04/03/18 18:28	56-23-5	
Chlorobenzene	**<0.76**	ug/kg	5.1	0.76	1	04/03/18 14:51	04/03/18 18:28	108-90-7	
Chloroethane	**<2.0**	ug/kg	12.7	2.0	1	04/03/18 14:51	04/03/18 18:28	75-00-3	
Chloroform	**<0.99**	ug/kg	5.1	0.99	1	04/03/18 14:51	04/03/18 18:28	67-66-3	
Chloromethane	**<2.2**	ug/kg	12.7	2.2	1	04/03/18 14:51	04/03/18 18:28	74-87-3	
Dibromochloromethane	**<0.26**	ug/kg	5.1	0.26	1	04/03/18 14:51	04/03/18 18:28	124-48-1	
Dichlorodifluoromethane	**<4.8**	ug/kg	12.7	4.8	1	04/03/18 14:51	04/03/18 18:28	75-71-8	
Ethylbenzene	**<0.93**	ug/kg	5.1	0.93	1	04/03/18 14:51	04/03/18 18:28	100-41-4	
Hexachloro-1,3-butadiene	**<3.3**	ug/kg	12.7	3.3	1	04/03/18 14:51	04/03/18 18:28	87-68-3	
Methyl-tert-butyl ether	**<0.75**	ug/kg	5.1	0.75	1	04/03/18 14:51	04/03/18 18:28	1634-04-4	
Methylene Chloride	**<2.9**	ug/kg	25.3	2.9	1	04/03/18 14:51	04/03/18 18:28	75-09-2	
Naphthalene	**<1.8**	ug/kg	12.7	1.8	1	04/03/18 14:51	04/03/18 18:28	91-20-3	
Styrene	**<0.54**	ug/kg	5.1	0.54	1	04/03/18 14:51	04/03/18 18:28	100-42-5	
Tetrachloroethene	**<0.66**	ug/kg	5.1	0.66	1	04/03/18 14:51	04/03/18 18:28	127-18-4	
Tetrahydrofuran	**<11.6**	ug/kg	50.6	11.6	1	04/03/18 14:51	04/03/18 18:28	109-99-9	
Toluene	**<1.4**	ug/kg	5.1	1.4	1	04/03/18 14:51	04/03/18 18:28	108-88-3	
Trichloroethene	**<0.14**	ug/kg	5.1	0.14	1	04/03/18 14:51	04/03/18 18:28	79-01-6	
Trichlorofluoromethane	**<2.1**	ug/kg	12.7	2.1	1	04/03/18 14:51	04/03/18 18:28	75-69-4	
Vinyl acetate	**<2.4**	ug/kg	12.7	2.4	1	04/03/18 14:51	04/03/18 18:28	108-05-4	
Vinyl chloride	**<1.2**	ug/kg	5.1	1.2	1	04/03/18 14:51	04/03/18 18:28	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV108-S-0-033018 **Lab ID: 10425720001** Collected: 03/30/18 09:50 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.86**	ug/kg	5.1	0.86	1	04/03/18 14:51	04/03/18 18:28	156-59-2	
cis-1,3-Dichloropropene	**<2.4**	ug/kg	5.1	2.4	1	04/03/18 14:51	04/03/18 18:28	10061-01-5	
m&p-Xylene	**<1.3**	ug/kg	10.1	1.3	1	04/03/18 14:51	04/03/18 18:28	179601-23-1	
o-Xylene	**<0.61**	ug/kg	5.1	0.61	1	04/03/18 14:51	04/03/18 18:28	95-47-6	
trans-1,2-Dichloroethene	**<0.89**	ug/kg	5.1	0.89	1	04/03/18 14:51	04/03/18 18:28	156-60-5	
trans-1,3-Dichloropropene	**<0.93**	ug/kg	5.1	0.93	1	04/03/18 14:51	04/03/18 18:28	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	115	%.	75-126		1	04/03/18 14:51	04/03/18 18:28	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/03/18 14:51	04/03/18 18:28	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	04/03/18 14:51	04/03/18 18:28	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV108-S-3-033018 **Lab ID: 10425720002** Collected: 03/30/18 10:05 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.3**	%	0.10	0.10	1		04/02/18 11:04		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 18:47	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.78**	ug/kg	5.8	0.78	1	04/03/18 14:51	04/03/18 18:47	79-34-5	
1,1,2-Trichloroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 18:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 18:47	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 18:47	75-34-3	
1,1-Dichloroethene	**<0.83**	ug/kg	5.8	0.83	1	04/03/18 14:51	04/03/18 18:47	75-35-4	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	5.8	2.3	1	04/03/18 14:51	04/03/18 18:47	120-82-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/kg	5.8	0.28	1	04/03/18 14:51	04/03/18 18:47	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 18:47	106-93-4	
1,2-Dichlorobenzene	**<0.91**	ug/kg	5.8	0.91	1	04/03/18 14:51	04/03/18 18:47	95-50-1	
1,2-Dichloroethane	**7.5**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 18:47	107-06-2	
1,3,5-Trimethylbenzene	**<0.69**	ug/kg	5.8	0.69	1	04/03/18 14:51	04/03/18 18:47	108-67-8	
1,3-Dichlorobenzene	**<0.75**	ug/kg	5.8	0.75	1	04/03/18 14:51	04/03/18 18:47	541-73-1	
1,4-Dichlorobenzene	**<0.83**	ug/kg	5.8	0.83	1	04/03/18 14:51	04/03/18 18:47	106-46-7	
2-Butanone (MEK)	**<4.4**	ug/kg	28.9	4.4	1	04/03/18 14:51	04/03/18 18:47	78-93-3	
2-Hexanone	**<3.3**	ug/kg	28.9	3.3	1	04/03/18 14:51	04/03/18 18:47	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.7**	ug/kg	28.9	3.7	1	04/03/18 14:51	04/03/18 18:47	108-10-1	
Acetone	**<12.0**	ug/kg	72.2	12.0	1	04/03/18 14:51	04/03/18 18:47	67-64-1	
Benzene	**<0.80**	ug/kg	5.8	0.80	1	04/03/18 14:51	04/03/18 18:47	71-43-2	
Bromodichloromethane	**<0.91**	ug/kg	5.8	0.91	1	04/03/18 14:51	04/03/18 18:47	75-27-4	
Bromoform	**<3.7**	ug/kg	28.9	3.7	1	04/03/18 14:51	04/03/18 18:47	75-25-2	
Bromomethane	**<5.0**	ug/kg	28.9	5.0	1	04/03/18 14:51	04/03/18 18:47	74-83-9	
Carbon tetrachloride	**<0.80**	ug/kg	5.8	0.80	1	04/03/18 14:51	04/03/18 18:47	56-23-5	
Chlorobenzene	**<0.86**	ug/kg	5.8	0.86	1	04/03/18 14:51	04/03/18 18:47	108-90-7	
Chloroethane	**<2.2**	ug/kg	14.4	2.2	1	04/03/18 14:51	04/03/18 18:47	75-00-3	
Chloroform	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 18:47	67-66-3	
Chloromethane	**<2.5**	ug/kg	14.4	2.5	1	04/03/18 14:51	04/03/18 18:47	74-87-3	
Dibromochloromethane	**<0.29**	ug/kg	5.8	0.29	1	04/03/18 14:51	04/03/18 18:47	124-48-1	
Dichlorodifluoromethane	**<5.5**	ug/kg	14.4	5.5	1	04/03/18 14:51	04/03/18 18:47	75-71-8	
Ethylbenzene	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 18:47	100-41-4	
Hexachloro-1,3-butadiene	**<3.8**	ug/kg	14.4	3.8	1	04/03/18 14:51	04/03/18 18:47	87-68-3	
Methyl-tert-butyl ether	**<0.86**	ug/kg	5.8	0.86	1	04/03/18 14:51	04/03/18 18:47	1634-04-4	
Methylene Chloride	**5.3J**	ug/kg	28.9	3.3	1	04/03/18 14:51	04/03/18 18:47	75-09-2	
Naphthalene	**<2.1**	ug/kg	14.4	2.1	1	04/03/18 14:51	04/03/18 18:47	91-20-3	
Styrene	**<0.61**	ug/kg	5.8	0.61	1	04/03/18 14:51	04/03/18 18:47	100-42-5	
Tetrachloroethene	**0.92J**	ug/kg	5.8	0.75	1	04/03/18 14:51	04/03/18 18:47	127-18-4	
Tetrahydrofuran	**<13.2**	ug/kg	57.7	13.2	1	04/03/18 14:51	04/03/18 18:47	109-99-9	
Toluene	**<1.6**	ug/kg	5.8	1.6	1	04/03/18 14:51	04/03/18 18:47	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.8	0.16	1	04/03/18 14:51	04/03/18 18:47	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.4	2.4	1	04/03/18 14:51	04/03/18 18:47	75-69-4	
Vinyl acetate	**<2.8**	ug/kg	14.4	2.8	1	04/03/18 14:51	04/03/18 18:47	108-05-4	
Vinyl chloride	**<1.4**	ug/kg	5.8	1.4	1	04/03/18 14:51	04/03/18 18:47	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10425720

Sample: SV108-S-3-033018 **Lab ID: 10425720002** Collected: 03/30/18 10:05 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.98**	ug/kg	5.8	0.98	1	04/03/18 14:51	04/03/18 18:47	156-59-2	
cis-1,3-Dichloropropene	**<2.7**	ug/kg	5.8	2.7	1	04/03/18 14:51	04/03/18 18:47	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.5	1.5	1	04/03/18 14:51	04/03/18 18:47	179601-23-1	
o-Xylene	**<0.69**	ug/kg	5.8	0.69	1	04/03/18 14:51	04/03/18 18:47	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 18:47	156-60-5	
trans-1,3-Dichloropropene	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 18:47	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-126		1	04/03/18 14:51	04/03/18 18:47	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/03/18 14:51	04/03/18 18:47	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-128		1	04/03/18 14:51	04/03/18 18:47	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV109-S-0-033018 **Lab ID: 10425720003** Collected: 03/30/18 10:20 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**24.8**	%	0.10	0.10	1		04/02/18 11:04		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.80**	ug/kg	4.3	0.80	1	04/03/18 14:51	04/03/18 19:06	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.58**	ug/kg	4.3	0.58	1	04/03/18 14:51	04/03/18 19:06	79-34-5	
1,1,2-Trichloroethane	**<0.74**	ug/kg	4.3	0.74	1	04/03/18 14:51	04/03/18 19:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 19:06	76-13-1	
1,1-Dichloroethane	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 19:06	75-34-3	
1,1-Dichloroethene	**<0.61**	ug/kg	4.3	0.61	1	04/03/18 14:51	04/03/18 19:06	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.3	1.7	1	04/03/18 14:51	04/03/18 19:06	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.3	0.21	1	04/03/18 14:51	04/03/18 19:06	95-63-6	
1,2-Dibromoethane (EDB)	**<0.84**	ug/kg	4.3	0.84	1	04/03/18 14:51	04/03/18 19:06	106-93-4	
1,2-Dichlorobenzene	**<0.67**	ug/kg	4.3	0.67	1	04/03/18 14:51	04/03/18 19:06	95-50-1	
1,2-Dichloroethane	**<0.75**	ug/kg	4.3	0.75	1	04/03/18 14:51	04/03/18 19:06	107-06-2	
1,3,5-Trimethylbenzene	**<0.51**	ug/kg	4.3	0.51	1	04/03/18 14:51	04/03/18 19:06	108-67-8	
1,3-Dichlorobenzene	**<0.55**	ug/kg	4.3	0.55	1	04/03/18 14:51	04/03/18 19:06	541-73-1	
1,4-Dichlorobenzene	**<0.62**	ug/kg	4.3	0.62	1	04/03/18 14:51	04/03/18 19:06	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.3	3.3	1	04/03/18 14:51	04/03/18 19:06	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.3	2.5	1	04/03/18 14:51	04/03/18 19:06	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.3	2.8	1	04/03/18 14:51	04/03/18 19:06	108-10-1	
Acetone	**20.9J**	ug/kg	53.4	8.9	1	04/03/18 14:51	04/03/18 19:06	67-64-1	
Benzene	**<0.59**	ug/kg	4.3	0.59	1	04/03/18 14:51	04/03/18 19:06	71-43-2	
Bromodichloromethane	**<0.67**	ug/kg	4.3	0.67	1	04/03/18 14:51	04/03/18 19:06	75-27-4	
Bromoform	**<2.7**	ug/kg	21.3	2.7	1	04/03/18 14:51	04/03/18 19:06	75-25-2	
Bromomethane	**<3.7**	ug/kg	21.3	3.7	1	04/03/18 14:51	04/03/18 19:06	74-83-9	
Carbon tetrachloride	**<0.59**	ug/kg	4.3	0.59	1	04/03/18 14:51	04/03/18 19:06	56-23-5	
Chlorobenzene	**<0.64**	ug/kg	4.3	0.64	1	04/03/18 14:51	04/03/18 19:06	108-90-7	
Chloroethane	**<1.7**	ug/kg	10.7	1.7	1	04/03/18 14:51	04/03/18 19:06	75-00-3	
Chloroform	**<0.84**	ug/kg	4.3	0.84	1	04/03/18 14:51	04/03/18 19:06	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.7	1.9	1	04/03/18 14:51	04/03/18 19:06	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.3	0.22	1	04/03/18 14:51	04/03/18 19:06	124-48-1	
Dichlorodifluoromethane	**<4.0**	ug/kg	10.7	4.0	1	04/03/18 14:51	04/03/18 19:06	75-71-8	
Ethylbenzene	**<0.78**	ug/kg	4.3	0.78	1	04/03/18 14:51	04/03/18 19:06	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.7	2.8	1	04/03/18 14:51	04/03/18 19:06	87-68-3	
Methyl-tert-butyl ether	**<0.63**	ug/kg	4.3	0.63	1	04/03/18 14:51	04/03/18 19:06	1634-04-4	
Methylene Chloride	**<2.4**	ug/kg	21.3	2.4	1	04/03/18 14:51	04/03/18 19:06	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.7	1.5	1	04/03/18 14:51	04/03/18 19:06	91-20-3	
Styrene	**<0.45**	ug/kg	4.3	0.45	1	04/03/18 14:51	04/03/18 19:06	100-42-5	
Tetrachloroethene	**<0.55**	ug/kg	4.3	0.55	1	04/03/18 14:51	04/03/18 19:06	127-18-4	
Tetrahydrofuran	**<9.8**	ug/kg	42.7	9.8	1	04/03/18 14:51	04/03/18 19:06	109-99-9	
Toluene	**<1.2**	ug/kg	4.3	1.2	1	04/03/18 14:51	04/03/18 19:06	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.3	0.12	1	04/03/18 14:51	04/03/18 19:06	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.7	1.8	1	04/03/18 14:51	04/03/18 19:06	75-69-4	
Vinyl acetate	**<2.1**	ug/kg	10.7	2.1	1	04/03/18 14:51	04/03/18 19:06	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.3	1.0	1	04/03/18 14:51	04/03/18 19:06	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10425720

Sample: SV109-S-0-033018 **Lab ID: 10425720003** Collected: 03/30/18 10:20 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.73**	ug/kg	4.3	0.73	1	04/03/18 14:51	04/03/18 19:06	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.3	2.0	1	04/03/18 14:51	04/03/18 19:06	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.5	1.1	1	04/03/18 14:51	04/03/18 19:06	179601-23-1	
o-Xylene	**<0.51**	ug/kg	4.3	0.51	1	04/03/18 14:51	04/03/18 19:06	95-47-6	
trans-1,2-Dichloroethene	**<0.75**	ug/kg	4.3	0.75	1	04/03/18 14:51	04/03/18 19:06	156-60-5	
trans-1,3-Dichloropropene	**<0.78**	ug/kg	4.3	0.78	1	04/03/18 14:51	04/03/18 19:06	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-126		1	04/03/18 14:51	04/03/18 19:06	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 19:06	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 19:06	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV109-S-3-033018 **Lab ID: 10425720004** Collected: 03/30/18 10:35 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**27.6**	%	0.10	0.10	1		04/02/18 11:04		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.79**	ug/kg	5.8	0.79	1	04/03/18 14:51	04/03/18 19:25	79-34-5	
1,1,2-Trichloroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 19:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	76-13-1	
1,1-Dichloroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 19:25	75-34-3	
1,1-Dichloroethene	**<0.83**	ug/kg	5.8	0.83	1	04/03/18 14:51	04/03/18 19:25	75-35-4	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	5.8	2.3	1	04/03/18 14:51	04/03/18 19:25	120-82-1	
1,2,4-Trimethylbenzene	**<0.28**	ug/kg	5.8	0.28	1	04/03/18 14:51	04/03/18 19:25	95-63-6	
1,2-Dibromoethane (EDB)	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	106-93-4	
1,2-Dichlorobenzene	**<0.92**	ug/kg	5.8	0.92	1	04/03/18 14:51	04/03/18 19:25	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 19:25	107-06-2	
1,3,5-Trimethylbenzene	**<0.70**	ug/kg	5.8	0.70	1	04/03/18 14:51	04/03/18 19:25	108-67-8	
1,3-Dichlorobenzene	**<0.76**	ug/kg	5.8	0.76	1	04/03/18 14:51	04/03/18 19:25	541-73-1	
1,4-Dichlorobenzene	**<0.84**	ug/kg	5.8	0.84	1	04/03/18 14:51	04/03/18 19:25	106-46-7	
2-Butanone (MEK)	**<4.5**	ug/kg	29.2	4.5	1	04/03/18 14:51	04/03/18 19:25	78-93-3	
2-Hexanone	**<3.4**	ug/kg	29.2	3.4	1	04/03/18 14:51	04/03/18 19:25	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.8**	ug/kg	29.2	3.8	1	04/03/18 14:51	04/03/18 19:25	108-10-1	
Acetone	**<12.2**	ug/kg	73.0	12.2	1	04/03/18 14:51	04/03/18 19:25	67-64-1	
Benzene	**<0.81**	ug/kg	5.8	0.81	1	04/03/18 14:51	04/03/18 19:25	71-43-2	
Bromodichloromethane	**<0.92**	ug/kg	5.8	0.92	1	04/03/18 14:51	04/03/18 19:25	75-27-4	
Bromoform	**<3.8**	ug/kg	29.2	3.8	1	04/03/18 14:51	04/03/18 19:25	75-25-2	
Bromomethane	**<5.1**	ug/kg	29.2	5.1	1	04/03/18 14:51	04/03/18 19:25	74-83-9	
Carbon tetrachloride	**<0.81**	ug/kg	5.8	0.81	1	04/03/18 14:51	04/03/18 19:25	56-23-5	
Chlorobenzene	**<0.87**	ug/kg	5.8	0.87	1	04/03/18 14:51	04/03/18 19:25	108-90-7	
Chloroethane	**<2.3**	ug/kg	14.6	2.3	1	04/03/18 14:51	04/03/18 19:25	75-00-3	
Chloroform	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	67-66-3	
Chloromethane	**<2.6**	ug/kg	14.6	2.6	1	04/03/18 14:51	04/03/18 19:25	74-87-3	
Dibromochloromethane	**<0.30**	ug/kg	5.8	0.30	1	04/03/18 14:51	04/03/18 19:25	124-48-1	
Dichlorodifluoromethane	**<5.5**	ug/kg	14.6	5.5	1	04/03/18 14:51	04/03/18 19:25	75-71-8	
Ethylbenzene	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	100-41-4	
Hexachloro-1,3-butadiene	**<3.8**	ug/kg	14.6	3.8	1	04/03/18 14:51	04/03/18 19:25	87-68-3	
Methyl-tert-butyl ether	**<0.87**	ug/kg	5.8	0.87	1	04/03/18 14:51	04/03/18 19:25	1634-04-4	
Methylene Chloride	**<3.3**	ug/kg	29.2	3.3	1	04/03/18 14:51	04/03/18 19:25	75-09-2	
Naphthalene	**<2.1**	ug/kg	14.6	2.1	1	04/03/18 14:51	04/03/18 19:25	91-20-3	
Styrene	**<0.62**	ug/kg	5.8	0.62	1	04/03/18 14:51	04/03/18 19:25	100-42-5	
Tetrachloroethene	**<0.76**	ug/kg	5.8	0.76	1	04/03/18 14:51	04/03/18 19:25	127-18-4	
Tetrahydrofuran	**<13.3**	ug/kg	58.4	13.3	1	04/03/18 14:51	04/03/18 19:25	109-99-9	
Toluene	**<1.6**	ug/kg	5.8	1.6	1	04/03/18 14:51	04/03/18 19:25	108-88-3	
Trichloroethene	**<0.16**	ug/kg	5.8	0.16	1	04/03/18 14:51	04/03/18 19:25	79-01-6	
Trichlorofluoromethane	**<2.4**	ug/kg	14.6	2.4	1	04/03/18 14:51	04/03/18 19:25	75-69-4	
Vinyl acetate	**<2.8**	ug/kg	14.6	2.8	1	04/03/18 14:51	04/03/18 19:25	108-05-4	
Vinyl chloride	**<1.4**	ug/kg	5.8	1.4	1	04/03/18 14:51	04/03/18 19:25	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV109-S-3-033018 **Lab ID: 10425720004** Collected: 03/30/18 10:35 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.99**	ug/kg	5.8	0.99	1	04/03/18 14:51	04/03/18 19:25	156-59-2	
cis-1,3-Dichloropropene	**<2.7**	ug/kg	5.8	2.7	1	04/03/18 14:51	04/03/18 19:25	10061-01-5	
m&p-Xylene	**<1.5**	ug/kg	11.7	1.5	1	04/03/18 14:51	04/03/18 19:25	179601-23-1	
o-Xylene	**<0.70**	ug/kg	5.8	0.70	1	04/03/18 14:51	04/03/18 19:25	95-47-6	
trans-1,2-Dichloroethene	**<1.0**	ug/kg	5.8	1.0	1	04/03/18 14:51	04/03/18 19:25	156-60-5	
trans-1,3-Dichloropropene	**<1.1**	ug/kg	5.8	1.1	1	04/03/18 14:51	04/03/18 19:25	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-126		1	04/03/18 14:51	04/03/18 19:25	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	04/03/18 14:51	04/03/18 19:25	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-128		1	04/03/18 14:51	04/03/18 19:25	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV112-S-0-033018 **Lab ID: 10425720005** Collected: 03/30/18 10:50 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**27.6**	%	0.10	0.10	1		04/02/18 11:04		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.82**	ug/kg	4.3	0.82	1	04/03/18 14:51	04/03/18 19:44	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.59**	ug/kg	4.3	0.59	1	04/03/18 14:51	04/03/18 19:44	79-34-5	
1,1,2-Trichloroethane	**<0.75**	ug/kg	4.3	0.75	1	04/03/18 14:51	04/03/18 19:44	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.79**	ug/kg	4.3	0.79	1	04/03/18 14:51	04/03/18 19:44	76-13-1	
1,1-Dichloroethane	**<0.78**	ug/kg	4.3	0.78	1	04/03/18 14:51	04/03/18 19:44	75-34-3	
1,1-Dichloroethene	**<0.62**	ug/kg	4.3	0.62	1	04/03/18 14:51	04/03/18 19:44	75-35-4	
1,2,4-Trichlorobenzene	**<1.8**	ug/kg	4.3	1.8	1	04/03/18 14:51	04/03/18 19:44	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.3	0.21	1	04/03/18 14:51	04/03/18 19:44	95-63-6	
1,2-Dibromoethane (EDB)	**<0.85**	ug/kg	4.3	0.85	1	04/03/18 14:51	04/03/18 19:44	106-93-4	
1,2-Dichlorobenzene	**<0.69**	ug/kg	4.3	0.69	1	04/03/18 14:51	04/03/18 19:44	95-50-1	
1,2-Dichloroethane	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 19:44	107-06-2	
1,3,5-Trimethylbenzene	**<0.52**	ug/kg	4.3	0.52	1	04/03/18 14:51	04/03/18 19:44	108-67-8	
1,3-Dichlorobenzene	**<0.56**	ug/kg	4.3	0.56	1	04/03/18 14:51	04/03/18 19:44	541-73-1	
1,4-Dichlorobenzene	**<0.63**	ug/kg	4.3	0.63	1	04/03/18 14:51	04/03/18 19:44	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.7	3.3	1	04/03/18 14:51	04/03/18 19:44	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.7	2.5	1	04/03/18 14:51	04/03/18 19:44	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.7	2.8	1	04/03/18 14:51	04/03/18 19:44	108-10-1	
Acetone	**25.9J**	ug/kg	54.4	9.1	1	04/03/18 14:51	04/03/18 19:44	67-64-1	
Benzene	**<0.60**	ug/kg	4.3	0.60	1	04/03/18 14:51	04/03/18 19:44	71-43-2	
Bromodichloromethane	**<0.69**	ug/kg	4.3	0.69	1	04/03/18 14:51	04/03/18 19:44	75-27-4	
Bromoform	**<2.8**	ug/kg	21.7	2.8	1	04/03/18 14:51	04/03/18 19:44	75-25-2	
Bromomethane	**<3.8**	ug/kg	21.7	3.8	1	04/03/18 14:51	04/03/18 19:44	74-83-9	
Carbon tetrachloride	**<0.60**	ug/kg	4.3	0.60	1	04/03/18 14:51	04/03/18 19:44	56-23-5	
Chlorobenzene	**<0.65**	ug/kg	4.3	0.65	1	04/03/18 14:51	04/03/18 19:44	108-90-7	
Chloroethane	**<1.7**	ug/kg	10.9	1.7	1	04/03/18 14:51	04/03/18 19:44	75-00-3	
Chloroform	**<0.85**	ug/kg	4.3	0.85	1	04/03/18 14:51	04/03/18 19:44	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.9	1.9	1	04/03/18 14:51	04/03/18 19:44	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.3	0.22	1	04/03/18 14:51	04/03/18 19:44	124-48-1	
Dichlorodifluoromethane	**<4.1**	ug/kg	10.9	4.1	1	04/03/18 14:51	04/03/18 19:44	75-71-8	
Ethylbenzene	**<0.80**	ug/kg	4.3	0.80	1	04/03/18 14:51	04/03/18 19:44	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.9	2.8	1	04/03/18 14:51	04/03/18 19:44	87-68-3	
Methyl-tert-butyl ether	**<0.65**	ug/kg	4.3	0.65	1	04/03/18 14:51	04/03/18 19:44	1634-04-4	
Methylene Chloride	**<2.5**	ug/kg	21.7	2.5	1	04/03/18 14:51	04/03/18 19:44	75-09-2	
Naphthalene	**<1.6**	ug/kg	10.9	1.6	1	04/03/18 14:51	04/03/18 19:44	91-20-3	
Styrene	**<0.46**	ug/kg	4.3	0.46	1	04/03/18 14:51	04/03/18 19:44	100-42-5	
Tetrachloroethene	**<0.56**	ug/kg	4.3	0.56	1	04/03/18 14:51	04/03/18 19:44	127-18-4	
Tetrahydrofuran	**<9.9**	ug/kg	43.5	9.9	1	04/03/18 14:51	04/03/18 19:44	109-99-9	
Toluene	**<1.2**	ug/kg	4.3	1.2	1	04/03/18 14:51	04/03/18 19:44	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.3	0.12	1	04/03/18 14:51	04/03/18 19:44	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.9	1.8	1	04/03/18 14:51	04/03/18 19:44	75-69-4	
Vinyl acetate	**<2.1**	ug/kg	10.9	2.1	1	04/03/18 14:51	04/03/18 19:44	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.3	1.0	1	04/03/18 14:51	04/03/18 19:44	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV112-S-0-033018 **Lab ID: 10425720005** Collected: 03/30/18 10:50 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.74**	ug/kg	4.3	0.74	1	04/03/18 14:51	04/03/18 19:44	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.3	2.0	1	04/03/18 14:51	04/03/18 19:44	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.7	1.1	1	04/03/18 14:51	04/03/18 19:44	179601-23-1	
o-Xylene	**<0.52**	ug/kg	4.3	0.52	1	04/03/18 14:51	04/03/18 19:44	95-47-6	
trans-1,2-Dichloroethene	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 19:44	156-60-5	
trans-1,3-Dichloropropene	**<0.80**	ug/kg	4.3	0.80	1	04/03/18 14:51	04/03/18 19:44	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	04/03/18 14:51	04/03/18 19:44	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 19:44	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 19:44	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10425720

Sample: SV112-S-3-033018 **Lab ID: 10425720006** Collected: 03/30/18 11:05 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**25.5**	%	0.10	0.10	1		04/02/18 11:05		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.80**	ug/kg	4.2	0.80	1	04/03/18 14:51	04/03/18 20:03	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.58**	ug/kg	4.2	0.58	1	04/03/18 14:51	04/03/18 20:03	79-34-5	
1,1,2-Trichloroethane	**<0.74**	ug/kg	4.2	0.74	1	04/03/18 14:51	04/03/18 20:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.77**	ug/kg	4.2	0.77	1	04/03/18 14:51	04/03/18 20:03	76-13-1	
1,1-Dichloroethane	**<0.76**	ug/kg	4.2	0.76	1	04/03/18 14:51	04/03/18 20:03	75-34-3	
1,1-Dichloroethene	**<0.61**	ug/kg	4.2	0.61	1	04/03/18 14:51	04/03/18 20:03	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.2	1.7	1	04/03/18 14:51	04/03/18 20:03	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.2	0.21	1	04/03/18 14:51	04/03/18 20:03	95-63-6	
1,2-Dibromoethane (EDB)	**<0.83**	ug/kg	4.2	0.83	1	04/03/18 14:51	04/03/18 20:03	106-93-4	
1,2-Dichlorobenzene	**<0.67**	ug/kg	4.2	0.67	1	04/03/18 14:51	04/03/18 20:03	95-50-1	
1,2-Dichloroethane	**<0.75**	ug/kg	4.2	0.75	1	04/03/18 14:51	04/03/18 20:03	107-06-2	
1,3,5-Trimethylbenzene	**<0.51**	ug/kg	4.2	0.51	1	04/03/18 14:51	04/03/18 20:03	108-67-8	
1,3-Dichlorobenzene	**<0.55**	ug/kg	4.2	0.55	1	04/03/18 14:51	04/03/18 20:03	541-73-1	
1,4-Dichlorobenzene	**<0.61**	ug/kg	4.2	0.61	1	04/03/18 14:51	04/03/18 20:03	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.2	3.3	1	04/03/18 14:51	04/03/18 20:03	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.2	2.5	1	04/03/18 14:51	04/03/18 20:03	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.2	2.8	1	04/03/18 14:51	04/03/18 20:03	108-10-1	
Acetone	**15.3J**	ug/kg	53.1	8.8	1	04/03/18 14:51	04/03/18 20:03	67-64-1	
Benzene	**<0.59**	ug/kg	4.2	0.59	1	04/03/18 14:51	04/03/18 20:03	71-43-2	
Bromodichloromethane	**<0.67**	ug/kg	4.2	0.67	1	04/03/18 14:51	04/03/18 20:03	75-27-4	
Bromoform	**<2.7**	ug/kg	21.2	2.7	1	04/03/18 14:51	04/03/18 20:03	75-25-2	
Bromomethane	**<3.7**	ug/kg	21.2	3.7	1	04/03/18 14:51	04/03/18 20:03	74-83-9	
Carbon tetrachloride	**1.1J**	ug/kg	4.2	0.59	1	04/03/18 14:51	04/03/18 20:03	56-23-5	
Chlorobenzene	**<0.63**	ug/kg	4.2	0.63	1	04/03/18 14:51	04/03/18 20:03	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.6	1.6	1	04/03/18 14:51	04/03/18 20:03	75-00-3	
Chloroform	**<0.83**	ug/kg	4.2	0.83	1	04/03/18 14:51	04/03/18 20:03	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.6	1.9	1	04/03/18 14:51	04/03/18 20:03	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.2	0.22	1	04/03/18 14:51	04/03/18 20:03	124-48-1	
Dichlorodifluoromethane	**<4.0**	ug/kg	10.6	4.0	1	04/03/18 14:51	04/03/18 20:03	75-71-8	
Ethylbenzene	**<0.78**	ug/kg	4.2	0.78	1	04/03/18 14:51	04/03/18 20:03	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.6	2.8	1	04/03/18 14:51	04/03/18 20:03	87-68-3	
Methyl-tert-butyl ether	**<0.63**	ug/kg	4.2	0.63	1	04/03/18 14:51	04/03/18 20:03	1634-04-4	
Methylene Chloride	**<2.4**	ug/kg	21.2	2.4	1	04/03/18 14:51	04/03/18 20:03	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.6	1.5	1	04/03/18 14:51	04/03/18 20:03	91-20-3	
Styrene	**<0.45**	ug/kg	4.2	0.45	1	04/03/18 14:51	04/03/18 20:03	100-42-5	
Tetrachloroethene	**<0.55**	ug/kg	4.2	0.55	1	04/03/18 14:51	04/03/18 20:03	127-18-4	
Tetrahydrofuran	**<9.7**	ug/kg	42.5	9.7	1	04/03/18 14:51	04/03/18 20:03	109-99-9	
Toluene	**<1.2**	ug/kg	4.2	1.2	1	04/03/18 14:51	04/03/18 20:03	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.2	0.12	1	04/03/18 14:51	04/03/18 20:03	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.6	1.8	1	04/03/18 14:51	04/03/18 20:03	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.6	2.0	1	04/03/18 14:51	04/03/18 20:03	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.2	1.0	1	04/03/18 14:51	04/03/18 20:03	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV112-S-3-033018 **Lab ID: 10425720006** Collected: 03/30/18 11:05 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.72**	ug/kg	4.2	0.72	1	04/03/18 14:51	04/03/18 20:03	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.2	2.0	1	04/03/18 14:51	04/03/18 20:03	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.5	1.1	1	04/03/18 14:51	04/03/18 20:03	179601-23-1	
o-Xylene	**<0.51**	ug/kg	4.2	0.51	1	04/03/18 14:51	04/03/18 20:03	95-47-6	
trans-1,2-Dichloroethene	**<0.75**	ug/kg	4.2	0.75	1	04/03/18 14:51	04/03/18 20:03	156-60-5	
trans-1,3-Dichloropropene	**<0.78**	ug/kg	4.2	0.78	1	04/03/18 14:51	04/03/18 20:03	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-126		1	04/03/18 14:51	04/03/18 20:03	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 20:03	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-128		1	04/03/18 14:51	04/03/18 20:03	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV113-S-0-033018 **Lab ID: 10425720007** Collected: 03/30/18 11:10 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**25.8**	%	0.10	0.10	1		04/02/18 12:13		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.86**	ug/kg	4.6	0.86	1	04/03/18 14:51	04/03/18 20:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.62**	ug/kg	4.6	0.62	1	04/03/18 14:51	04/03/18 20:22	79-34-5	
1,1,2-Trichloroethane	**<0.80**	ug/kg	4.6	0.80	1	04/03/18 14:51	04/03/18 20:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.83**	ug/kg	4.6	0.83	1	04/03/18 14:51	04/03/18 20:22	76-13-1	
1,1-Dichloroethane	**<0.82**	ug/kg	4.6	0.82	1	04/03/18 14:51	04/03/18 20:22	75-34-3	
1,1-Dichloroethene	**<0.66**	ug/kg	4.6	0.66	1	04/03/18 14:51	04/03/18 20:22	75-35-4	
1,2,4-Trichlorobenzene	**<1.8**	ug/kg	4.6	1.8	1	04/03/18 14:51	04/03/18 20:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.22**	ug/kg	4.6	0.22	1	04/03/18 14:51	04/03/18 20:22	95-63-6	
1,2-Dibromoethane (EDB)	**<0.90**	ug/kg	4.6	0.90	1	04/03/18 14:51	04/03/18 20:22	106-93-4	
1,2-Dichlorobenzene	**<0.72**	ug/kg	4.6	0.72	1	04/03/18 14:51	04/03/18 20:22	95-50-1	
1,2-Dichloroethane	**<0.81**	ug/kg	4.6	0.81	1	04/03/18 14:51	04/03/18 20:22	107-06-2	
1,3,5-Trimethylbenzene	**<0.55**	ug/kg	4.6	0.55	1	04/03/18 14:51	04/03/18 20:22	108-67-8	
1,3-Dichlorobenzene	**<0.59**	ug/kg	4.6	0.59	1	04/03/18 14:51	04/03/18 20:22	541-73-1	
1,4-Dichlorobenzene	**<0.66**	ug/kg	4.6	0.66	1	04/03/18 14:51	04/03/18 20:22	106-46-7	
2-Butanone (MEK)	**<3.5**	ug/kg	23.0	3.5	1	04/03/18 14:51	04/03/18 20:22	78-93-3	
2-Hexanone	**<2.7**	ug/kg	23.0	2.7	1	04/03/18 14:51	04/03/18 20:22	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<3.0**	ug/kg	23.0	3.0	1	04/03/18 14:51	04/03/18 20:22	108-10-1	
Acetone	**24.1J**	ug/kg	57.4	9.6	1	04/03/18 14:51	04/03/18 20:22	67-64-1	
Benzene	**<0.64**	ug/kg	4.6	0.64	1	04/03/18 14:51	04/03/18 20:22	71-43-2	
Bromodichloromethane	**<0.72**	ug/kg	4.6	0.72	1	04/03/18 14:51	04/03/18 20:22	75-27-4	
Bromoform	**<3.0**	ug/kg	23.0	3.0	1	04/03/18 14:51	04/03/18 20:22	75-25-2	
Bromomethane	**<4.0**	ug/kg	23.0	4.0	1	04/03/18 14:51	04/03/18 20:22	74-83-9	
Carbon tetrachloride	**<0.64**	ug/kg	4.6	0.64	1	04/03/18 14:51	04/03/18 20:22	56-23-5	
Chlorobenzene	**<0.69**	ug/kg	4.6	0.69	1	04/03/18 14:51	04/03/18 20:22	108-90-7	
Chloroethane	**<1.8**	ug/kg	11.5	1.8	1	04/03/18 14:51	04/03/18 20:22	75-00-3	
Chloroform	**<0.90**	ug/kg	4.6	0.90	1	04/03/18 14:51	04/03/18 20:22	67-66-3	
Chloromethane	**<2.0**	ug/kg	11.5	2.0	1	04/03/18 14:51	04/03/18 20:22	74-87-3	
Dibromochloromethane	**<0.23**	ug/kg	4.6	0.23	1	04/03/18 14:51	04/03/18 20:22	124-48-1	
Dichlorodifluoromethane	**<4.4**	ug/kg	11.5	4.4	1	04/03/18 14:51	04/03/18 20:22	75-71-8	
Ethylbenzene	**<0.84**	ug/kg	4.6	0.84	1	04/03/18 14:51	04/03/18 20:22	100-41-4	
Hexachloro-1,3-butadiene	**<3.0**	ug/kg	11.5	3.0	1	04/03/18 14:51	04/03/18 20:22	87-68-3	
Methyl-tert-butyl ether	**<0.68**	ug/kg	4.6	0.68	1	04/03/18 14:51	04/03/18 20:22	1634-04-4	
Methylene Chloride	**<2.6**	ug/kg	23.0	2.6	1	04/03/18 14:51	04/03/18 20:22	75-09-2	
Naphthalene	**<1.7**	ug/kg	11.5	1.7	1	04/03/18 14:51	04/03/18 20:22	91-20-3	
Styrene	**<0.49**	ug/kg	4.6	0.49	1	04/03/18 14:51	04/03/18 20:22	100-42-5	
Tetrachloroethene	**<0.59**	ug/kg	4.6	0.59	1	04/03/18 14:51	04/03/18 20:22	127-18-4	
Tetrahydrofuran	**<10.5**	ug/kg	45.9	10.5	1	04/03/18 14:51	04/03/18 20:22	109-99-9	
Toluene	**<1.3**	ug/kg	4.6	1.3	1	04/03/18 14:51	04/03/18 20:22	108-88-3	
Trichloroethene	**<0.13**	ug/kg	4.6	0.13	1	04/03/18 14:51	04/03/18 20:22	79-01-6	
Trichlorofluoromethane	**<1.9**	ug/kg	11.5	1.9	1	04/03/18 14:51	04/03/18 20:22	75-69-4	
Vinyl acetate	**<2.2**	ug/kg	11.5	2.2	1	04/03/18 14:51	04/03/18 20:22	108-05-4	
Vinyl chloride	**<1.1**	ug/kg	4.6	1.1	1	04/03/18 14:51	04/03/18 20:22	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV113-S-0-033018 **Lab ID: 10425720007** Collected: 03/30/18 11:10 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.78**	ug/kg	4.6	0.78	1	04/03/18 14:51	04/03/18 20:22	156-59-2	
cis-1,3-Dichloropropene	**<2.2**	ug/kg	4.6	2.2	1	04/03/18 14:51	04/03/18 20:22	10061-01-5	
m&p-Xylene	**<1.2**	ug/kg	9.2	1.2	1	04/03/18 14:51	04/03/18 20:22	179601-23-1	
o-Xylene	**<0.55**	ug/kg	4.6	0.55	1	04/03/18 14:51	04/03/18 20:22	95-47-6	
trans-1,2-Dichloroethene	**<0.81**	ug/kg	4.6	0.81	1	04/03/18 14:51	04/03/18 20:22	156-60-5	
trans-1,3-Dichloropropene	**<0.84**	ug/kg	4.6	0.84	1	04/03/18 14:51	04/03/18 20:22	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	115	%.	75-126		1	04/03/18 14:51	04/03/18 20:22	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 20:22	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-128		1	04/03/18 14:51	04/03/18 20:22	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV113-S-1.5-033018 **Lab ID: 10425720008** Collected: 03/30/18 11:15 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**23.9**	%	0.10	0.10	1		04/02/18 12:13		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.76**	ug/kg	4.1	0.76	1	04/03/18 14:51	04/03/18 20:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.55**	ug/kg	4.1	0.55	1	04/03/18 14:51	04/03/18 20:41	79-34-5	
1,1,2-Trichloroethane	**<0.70**	ug/kg	4.1	0.70	1	04/03/18 14:51	04/03/18 20:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.73**	ug/kg	4.1	0.73	1	04/03/18 14:51	04/03/18 20:41	76-13-1	
1,1-Dichloroethane	**<0.73**	ug/kg	4.1	0.73	1	04/03/18 14:51	04/03/18 20:41	75-34-3	
1,1-Dichloroethene	**<0.58**	ug/kg	4.1	0.58	1	04/03/18 14:51	04/03/18 20:41	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.1	1.6	1	04/03/18 14:51	04/03/18 20:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/kg	4.1	0.20	1	04/03/18 14:51	04/03/18 20:41	95-63-6	
1,2-Dibromoethane (EDB)	**<0.80**	ug/kg	4.1	0.80	1	04/03/18 14:51	04/03/18 20:41	106-93-4	
1,2-Dichlorobenzene	**<0.64**	ug/kg	4.1	0.64	1	04/03/18 14:51	04/03/18 20:41	95-50-1	
1,2-Dichloroethane	**<0.72**	ug/kg	4.1	0.72	1	04/03/18 14:51	04/03/18 20:41	107-06-2	
1,3,5-Trimethylbenzene	**<0.49**	ug/kg	4.1	0.49	1	04/03/18 14:51	04/03/18 20:41	108-67-8	
1,3-Dichlorobenzene	**<0.53**	ug/kg	4.1	0.53	1	04/03/18 14:51	04/03/18 20:41	541-73-1	
1,4-Dichlorobenzene	**<0.59**	ug/kg	4.1	0.59	1	04/03/18 14:51	04/03/18 20:41	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	20.3	3.1	1	04/03/18 14:51	04/03/18 20:41	78-93-3	
2-Hexanone	**<2.4**	ug/kg	20.3	2.4	1	04/03/18 14:51	04/03/18 20:41	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.3	2.6	1	04/03/18 14:51	04/03/18 20:41	108-10-1	
Acetone	**<8.4**	ug/kg	50.7	8.4	1	04/03/18 14:51	04/03/18 20:41	67-64-1	
Benzene	**1.0J**	ug/kg	4.1	0.56	1	04/03/18 14:51	04/03/18 20:41	71-43-2	
Bromodichloromethane	**<0.64**	ug/kg	4.1	0.64	1	04/03/18 14:51	04/03/18 20:41	75-27-4	
Bromoform	**<2.6**	ug/kg	20.3	2.6	1	04/03/18 14:51	04/03/18 20:41	75-25-2	
Bromomethane	**<3.5**	ug/kg	20.3	3.5	1	04/03/18 14:51	04/03/18 20:41	74-83-9	
Carbon tetrachloride	**<0.56**	ug/kg	4.1	0.56	1	04/03/18 14:51	04/03/18 20:41	56-23-5	
Chlorobenzene	**<0.61**	ug/kg	4.1	0.61	1	04/03/18 14:51	04/03/18 20:41	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.1	1.6	1	04/03/18 14:51	04/03/18 20:41	75-00-3	
Chloroform	**<0.80**	ug/kg	4.1	0.80	1	04/03/18 14:51	04/03/18 20:41	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.1	1.8	1	04/03/18 14:51	04/03/18 20:41	74-87-3	
Dibromochloromethane	**<0.21**	ug/kg	4.1	0.21	1	04/03/18 14:51	04/03/18 20:41	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	10.1	3.8	1	04/03/18 14:51	04/03/18 20:41	75-71-8	
Ethylbenzene	**<0.74**	ug/kg	4.1	0.74	1	04/03/18 14:51	04/03/18 20:41	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	10.1	2.6	1	04/03/18 14:51	04/03/18 20:41	87-68-3	
Methyl-tert-butyl ether	**<0.60**	ug/kg	4.1	0.60	1	04/03/18 14:51	04/03/18 20:41	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.3	2.3	1	04/03/18 14:51	04/03/18 20:41	75-09-2	
Naphthalene	**<1.5**	ug/kg	10.1	1.5	1	04/03/18 14:51	04/03/18 20:41	91-20-3	
Styrene	**<0.43**	ug/kg	4.1	0.43	1	04/03/18 14:51	04/03/18 20:41	100-42-5	
Tetrachloroethene	**<0.53**	ug/kg	4.1	0.53	1	04/03/18 14:51	04/03/18 20:41	127-18-4	
Tetrahydrofuran	**<9.3**	ug/kg	40.6	9.3	1	04/03/18 14:51	04/03/18 20:41	109-99-9	
Toluene	**<1.1**	ug/kg	4.1	1.1	1	04/03/18 14:51	04/03/18 20:41	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.1	0.11	1	04/03/18 14:51	04/03/18 20:41	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.1	1.7	1	04/03/18 14:51	04/03/18 20:41	75-69-4	
Vinyl acetate	**<2.0**	ug/kg	10.1	2.0	1	04/03/18 14:51	04/03/18 20:41	108-05-4	
Vinyl chloride	**<0.96**	ug/kg	4.1	0.96	1	04/03/18 14:51	04/03/18 20:41	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10425720

Sample: SV113-S-1.5-033018 **Lab ID: 10425720008** Collected: 03/30/18 11:15 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.69**	ug/kg	4.1	0.69	1	04/03/18 14:51	04/03/18 20:41	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.1	1.9	1	04/03/18 14:51	04/03/18 20:41	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.1	1.1	1	04/03/18 14:51	04/03/18 20:41	179601-23-1	
o-Xylene	**<0.49**	ug/kg	4.1	0.49	1	04/03/18 14:51	04/03/18 20:41	95-47-6	
trans-1,2-Dichloroethene	**<0.72**	ug/kg	4.1	0.72	1	04/03/18 14:51	04/03/18 20:41	156-60-5	
trans-1,3-Dichloropropene	**<0.74**	ug/kg	4.1	0.74	1	04/03/18 14:51	04/03/18 20:41	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	116	%.	75-126		1	04/03/18 14:51	04/03/18 20:41	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/03/18 14:51	04/03/18 20:41	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 20:41	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV114-S-3-033018 **Lab ID: 10425720009** Collected: 03/30/18 12:15 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**23.9**	%	0.10	0.10	1		04/02/18 12:13		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.72**	ug/kg	3.8	0.72	1	04/03/18 14:51	04/03/18 18:09	71-55-6	M1
1,1,2,2-Tetrachloroethane	**<0.52**	ug/kg	3.8	0.52	1	04/03/18 14:51	04/03/18 18:09	79-34-5	M1
1,1,2-Trichloroethane	**<0.66**	ug/kg	3.8	0.66	1	04/03/18 14:51	04/03/18 18:09	79-00-5	M1
1,1,2-Trichlorotrifluoroethane	**<0.69**	ug/kg	3.8	0.69	1	04/03/18 14:51	04/03/18 18:09	76-13-1	M1
1,1-Dichloroethane	**<0.68**	ug/kg	3.8	0.68	1	04/03/18 14:51	04/03/18 18:09	75-34-3	
1,1-Dichloroethene	**<0.55**	ug/kg	3.8	0.55	1	04/03/18 14:51	04/03/18 18:09	75-35-4	M1
1,2,4-Trichlorobenzene	**<1.5**	ug/kg	3.8	1.5	1	04/03/18 14:51	04/03/18 18:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	3.8	0.19	1	04/03/18 14:51	04/03/18 18:09	95-63-6	
1,2-Dibromoethane (EDB)	**<0.75**	ug/kg	3.8	0.75	1	04/03/18 14:51	04/03/18 18:09	106-93-4	M1
1,2-Dichlorobenzene	**<0.60**	ug/kg	3.8	0.60	1	04/03/18 14:51	04/03/18 18:09	95-50-1	
1,2-Dichloroethane	**<0.67**	ug/kg	3.8	0.67	1	04/03/18 14:51	04/03/18 18:09	107-06-2	M1
1,3,5-Trimethylbenzene	**<0.46**	ug/kg	3.8	0.46	1	04/03/18 14:51	04/03/18 18:09	108-67-8	
1,3-Dichlorobenzene	**<0.49**	ug/kg	3.8	0.49	1	04/03/18 14:51	04/03/18 18:09	541-73-1	
1,4-Dichlorobenzene	**<0.55**	ug/kg	3.8	0.55	1	04/03/18 14:51	04/03/18 18:09	106-46-7	
2-Butanone (MEK)	**<2.9**	ug/kg	19.1	2.9	1	04/03/18 14:51	04/03/18 18:09	78-93-3	M1
2-Hexanone	**<2.2**	ug/kg	19.1	2.2	1	04/03/18 14:51	04/03/18 18:09	591-78-6	M1
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/kg	19.1	2.5	1	04/03/18 14:51	04/03/18 18:09	108-10-1	M1
Acetone	**<7.9**	ug/kg	47.7	7.9	1	04/03/18 14:51	04/03/18 18:09	67-64-1	M1
Benzene	**<0.53**	ug/kg	3.8	0.53	1	04/03/18 14:51	04/03/18 18:09	71-43-2	
Bromodichloromethane	**<0.60**	ug/kg	3.8	0.60	1	04/03/18 14:51	04/03/18 18:09	75-27-4	M1
Bromoform	**<2.5**	ug/kg	19.1	2.5	1	04/03/18 14:51	04/03/18 18:09	75-25-2	
Bromomethane	**<3.3**	ug/kg	19.1	3.3	1	04/03/18 14:51	04/03/18 18:09	74-83-9	M1
Carbon tetrachloride	**<0.53**	ug/kg	3.8	0.53	1	04/03/18 14:51	04/03/18 18:09	56-23-5	M1
Chlorobenzene	**<0.57**	ug/kg	3.8	0.57	1	04/03/18 14:51	04/03/18 18:09	108-90-7	
Chloroethane	**<1.5**	ug/kg	9.5	1.5	1	04/03/18 14:51	04/03/18 18:09	75-00-3	M1,R1
Chloroform	**<0.75**	ug/kg	3.8	0.75	1	04/03/18 14:51	04/03/18 18:09	67-66-3	M1
Chloromethane	**<1.7**	ug/kg	9.5	1.7	1	04/03/18 14:51	04/03/18 18:09	74-87-3	M1,R1
Dibromochloromethane	**<0.19**	ug/kg	3.8	0.19	1	04/03/18 14:51	04/03/18 18:09	124-48-1	M1
Dichlorodifluoromethane	**<3.6**	ug/kg	9.5	3.6	1	04/03/18 14:51	04/03/18 18:09	75-71-8	M1,R1
Ethylbenzene	**<0.70**	ug/kg	3.8	0.70	1	04/03/18 14:51	04/03/18 18:09	100-41-4	
Hexachloro-1,3-butadiene	**<2.5**	ug/kg	9.5	2.5	1	04/03/18 14:51	04/03/18 18:09	87-68-3	R1
Methyl-tert-butyl ether	**<0.57**	ug/kg	3.8	0.57	1	04/03/18 14:51	04/03/18 18:09	1634-04-4	M1
Methylene Chloride	**<2.2**	ug/kg	19.1	2.2	1	04/03/18 14:51	04/03/18 18:09	75-09-2	
Naphthalene	**<1.4**	ug/kg	9.5	1.4	1	04/03/18 14:51	04/03/18 18:09	91-20-3	
Styrene	**<0.40**	ug/kg	3.8	0.40	1	04/03/18 14:51	04/03/18 18:09	100-42-5	
Tetrachloroethene	**<0.49**	ug/kg	3.8	0.49	1	04/03/18 14:51	04/03/18 18:09	127-18-4	
Tetrahydrofuran	**<8.7**	ug/kg	38.2	8.7	1	04/03/18 14:51	04/03/18 18:09	109-99-9	M1
Toluene	**<1.0**	ug/kg	3.8	1.0	1	04/03/18 14:51	04/03/18 18:09	108-88-3	
Trichloroethene	**<0.11**	ug/kg	3.8	0.11	1	04/03/18 14:51	04/03/18 18:09	79-01-6	
Trichlorofluoromethane	**<1.6**	ug/kg	9.5	1.6	1	04/03/18 14:51	04/03/18 18:09	75-69-4	M1,R1
Vinyl acetate	**<1.8**	ug/kg	9.5	1.8	1	04/03/18 14:51	04/03/18 18:09	108-05-4	M1
Vinyl chloride	**<0.90**	ug/kg	3.8	0.90	1	04/03/18 14:51	04/03/18 18:09	75-01-4	M1,R1

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: SV114-S-3-033018 **Lab ID: 10425720009** Collected: 03/30/18 12:15 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.65**	ug/kg	3.8	0.65	1	04/03/18 14:51	04/03/18 18:09	156-59-2	M1
cis-1,3-Dichloropropene	**<1.8**	ug/kg	3.8	1.8	1	04/03/18 14:51	04/03/18 18:09	10061-01-5	M1
m&p-Xylene	**<1.0**	ug/kg	7.6	1.0	1	04/03/18 14:51	04/03/18 18:09	179601-23-1	
o-Xylene	**<0.46**	ug/kg	3.8	0.46	1	04/03/18 14:51	04/03/18 18:09	95-47-6	
trans-1,2-Dichloroethene	**<0.67**	ug/kg	3.8	0.67	1	04/03/18 14:51	04/03/18 18:09	156-60-5	
trans-1,3-Dichloropropene	**<0.70**	ug/kg	3.8	0.70	1	04/03/18 14:51	04/03/18 18:09	10061-02-6	M1
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	04/03/18 14:51	04/03/18 18:09	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 18:09	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 18:09	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: FD01-033018 **Lab ID: 10425720010** Collected: 03/30/18 08:00 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**26.2**	%	0.10	0.10	1		04/02/18 12:14		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.75**	ug/kg	4.0	0.75	1	04/03/18 14:51	04/03/18 21:00	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.54**	ug/kg	4.0	0.54	1	04/03/18 14:51	04/03/18 21:00	79-34-5	
1,1,2-Trichloroethane	**<0.69**	ug/kg	4.0	0.69	1	04/03/18 14:51	04/03/18 21:00	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.72**	ug/kg	4.0	0.72	1	04/03/18 14:51	04/03/18 21:00	76-13-1	
1,1-Dichloroethane	**<0.71**	ug/kg	4.0	0.71	1	04/03/18 14:51	04/03/18 21:00	75-34-3	
1,1-Dichloroethene	**<0.57**	ug/kg	4.0	0.57	1	04/03/18 14:51	04/03/18 21:00	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.0	1.6	1	04/03/18 14:51	04/03/18 21:00	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	4.0	0.19	1	04/03/18 14:51	04/03/18 21:00	95-63-6	
1,2-Dibromoethane (EDB)	**<0.78**	ug/kg	4.0	0.78	1	04/03/18 14:51	04/03/18 21:00	106-93-4	
1,2-Dichlorobenzene	**<0.63**	ug/kg	4.0	0.63	1	04/03/18 14:51	04/03/18 21:00	95-50-1	
1,2-Dichloroethane	**<0.70**	ug/kg	4.0	0.70	1	04/03/18 14:51	04/03/18 21:00	107-06-2	
1,3,5-Trimethylbenzene	**<0.48**	ug/kg	4.0	0.48	1	04/03/18 14:51	04/03/18 21:00	108-67-8	
1,3-Dichlorobenzene	**<0.52**	ug/kg	4.0	0.52	1	04/03/18 14:51	04/03/18 21:00	541-73-1	
1,4-Dichlorobenzene	**<0.58**	ug/kg	4.0	0.58	1	04/03/18 14:51	04/03/18 21:00	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	19.9	3.1	1	04/03/18 14:51	04/03/18 21:00	78-93-3	
2-Hexanone	**<2.3**	ug/kg	19.9	2.3	1	04/03/18 14:51	04/03/18 21:00	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	19.9	2.6	1	04/03/18 14:51	04/03/18 21:00	108-10-1	
Acetone	**<8.3**	ug/kg	49.7	8.3	1	04/03/18 14:51	04/03/18 21:00	67-64-1	
Benzene	**0.64J**	ug/kg	4.0	0.55	1	04/03/18 14:51	04/03/18 21:00	71-43-2	
Bromodichloromethane	**<0.63**	ug/kg	4.0	0.63	1	04/03/18 14:51	04/03/18 21:00	75-27-4	
Bromoform	**<2.6**	ug/kg	19.9	2.6	1	04/03/18 14:51	04/03/18 21:00	75-25-2	
Bromomethane	**<3.5**	ug/kg	19.9	3.5	1	04/03/18 14:51	04/03/18 21:00	74-83-9	
Carbon tetrachloride	**<0.55**	ug/kg	4.0	0.55	1	04/03/18 14:51	04/03/18 21:00	56-23-5	
Chlorobenzene	**<0.59**	ug/kg	4.0	0.59	1	04/03/18 14:51	04/03/18 21:00	108-90-7	
Chloroethane	**<1.5**	ug/kg	9.9	1.5	1	04/03/18 14:51	04/03/18 21:00	75-00-3	
Chloroform	**<0.78**	ug/kg	4.0	0.78	1	04/03/18 14:51	04/03/18 21:00	67-66-3	
Chloromethane	**<1.8**	ug/kg	9.9	1.8	1	04/03/18 14:51	04/03/18 21:00	74-87-3	
Dibromochloromethane	**<0.20**	ug/kg	4.0	0.20	1	04/03/18 14:51	04/03/18 21:00	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	9.9	3.8	1	04/03/18 14:51	04/03/18 21:00	75-71-8	
Ethylbenzene	**<0.73**	ug/kg	4.0	0.73	1	04/03/18 14:51	04/03/18 21:00	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	9.9	2.6	1	04/03/18 14:51	04/03/18 21:00	87-68-3	
Methyl-tert-butyl ether	**<0.59**	ug/kg	4.0	0.59	1	04/03/18 14:51	04/03/18 21:00	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	19.9	2.3	1	04/03/18 14:51	04/03/18 21:00	75-09-2	
Naphthalene	**<1.4**	ug/kg	9.9	1.4	1	04/03/18 14:51	04/03/18 21:00	91-20-3	
Styrene	**<0.42**	ug/kg	4.0	0.42	1	04/03/18 14:51	04/03/18 21:00	100-42-5	
Tetrachloroethene	**<0.52**	ug/kg	4.0	0.52	1	04/03/18 14:51	04/03/18 21:00	127-18-4	
Tetrahydrofuran	**<9.1**	ug/kg	39.8	9.1	1	04/03/18 14:51	04/03/18 21:00	109-99-9	
Toluene	**<1.1**	ug/kg	4.0	1.1	1	04/03/18 14:51	04/03/18 21:00	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.0	0.11	1	04/03/18 14:51	04/03/18 21:00	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	9.9	1.7	1	04/03/18 14:51	04/03/18 21:00	75-69-4	
Vinyl acetate	**<1.9**	ug/kg	9.9	1.9	1	04/03/18 14:51	04/03/18 21:00	108-05-4	
Vinyl chloride	**<0.94**	ug/kg	4.0	0.94	1	04/03/18 14:51	04/03/18 21:00	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: FD01-033018 **Lab ID: 10425720010** Collected: 03/30/18 08:00 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.68**	ug/kg	4.0	0.68	1	04/03/18 14:51	04/03/18 21:00	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.0	1.9	1	04/03/18 14:51	04/03/18 21:00	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	8.0	1.0	1	04/03/18 14:51	04/03/18 21:00	179601-23-1	
o-Xylene	**<0.48**	ug/kg	4.0	0.48	1	04/03/18 14:51	04/03/18 21:00	95-47-6	
trans-1,2-Dichloroethene	**<0.70**	ug/kg	4.0	0.70	1	04/03/18 14:51	04/03/18 21:00	156-60-5	
trans-1,3-Dichloropropene	**<0.73**	ug/kg	4.0	0.73	1	04/03/18 14:51	04/03/18 21:00	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	04/03/18 14:51	04/03/18 21:00	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1	04/03/18 14:51	04/03/18 21:00	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 21:00	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: FD02-033018 **Lab ID: 10425720011** Collected: 03/30/18 08:30 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**23.7**	%	0.10	0.10	1		04/02/18 12:14		
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.82**	ug/kg	4.3	0.82	1	04/03/18 14:51	04/03/18 21:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.59**	ug/kg	4.3	0.59	1	04/03/18 14:51	04/03/18 21:19	79-34-5	
1,1,2-Trichloroethane	**<0.75**	ug/kg	4.3	0.75	1	04/03/18 14:51	04/03/18 21:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.79**	ug/kg	4.3	0.79	1	04/03/18 14:51	04/03/18 21:19	76-13-1	
1,1-Dichloroethane	**<0.78**	ug/kg	4.3	0.78	1	04/03/18 14:51	04/03/18 21:19	75-34-3	
1,1-Dichloroethene	**<0.62**	ug/kg	4.3	0.62	1	04/03/18 14:51	04/03/18 21:19	75-35-4	
1,2,4-Trichlorobenzene	**<1.7**	ug/kg	4.3	1.7	1	04/03/18 14:51	04/03/18 21:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.21**	ug/kg	4.3	0.21	1	04/03/18 14:51	04/03/18 21:19	95-63-6	
1,2-Dibromoethane (EDB)	**<0.85**	ug/kg	4.3	0.85	1	04/03/18 14:51	04/03/18 21:19	106-93-4	
1,2-Dichlorobenzene	**<0.68**	ug/kg	4.3	0.68	1	04/03/18 14:51	04/03/18 21:19	95-50-1	
1,2-Dichloroethane	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 21:19	107-06-2	
1,3,5-Trimethylbenzene	**<0.52**	ug/kg	4.3	0.52	1	04/03/18 14:51	04/03/18 21:19	108-67-8	
1,3-Dichlorobenzene	**<0.56**	ug/kg	4.3	0.56	1	04/03/18 14:51	04/03/18 21:19	541-73-1	
1,4-Dichlorobenzene	**<0.63**	ug/kg	4.3	0.63	1	04/03/18 14:51	04/03/18 21:19	106-46-7	
2-Butanone (MEK)	**<3.3**	ug/kg	21.7	3.3	1	04/03/18 14:51	04/03/18 21:19	78-93-3	
2-Hexanone	**<2.5**	ug/kg	21.7	2.5	1	04/03/18 14:51	04/03/18 21:19	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.8**	ug/kg	21.7	2.8	1	04/03/18 14:51	04/03/18 21:19	108-10-1	
Acetone	**<9.0**	ug/kg	54.3	9.0	1	04/03/18 14:51	04/03/18 21:19	67-64-1	
Benzene	**<0.60**	ug/kg	4.3	0.60	1	04/03/18 14:51	04/03/18 21:19	71-43-2	
Bromodichloromethane	**<0.68**	ug/kg	4.3	0.68	1	04/03/18 14:51	04/03/18 21:19	75-27-4	
Bromoform	**<2.8**	ug/kg	21.7	2.8	1	04/03/18 14:51	04/03/18 21:19	75-25-2	
Bromomethane	**<3.8**	ug/kg	21.7	3.8	1	04/03/18 14:51	04/03/18 21:19	74-83-9	
Carbon tetrachloride	**<0.60**	ug/kg	4.3	0.60	1	04/03/18 14:51	04/03/18 21:19	56-23-5	
Chlorobenzene	**<0.65**	ug/kg	4.3	0.65	1	04/03/18 14:51	04/03/18 21:19	108-90-7	
Chloroethane	**<1.7**	ug/kg	10.9	1.7	1	04/03/18 14:51	04/03/18 21:19	75-00-3	
Chloroform	**<0.85**	ug/kg	4.3	0.85	1	04/03/18 14:51	04/03/18 21:19	67-66-3	
Chloromethane	**<1.9**	ug/kg	10.9	1.9	1	04/03/18 14:51	04/03/18 21:19	74-87-3	
Dibromochloromethane	**<0.22**	ug/kg	4.3	0.22	1	04/03/18 14:51	04/03/18 21:19	124-48-1	
Dichlorodifluoromethane	**<4.1**	ug/kg	10.9	4.1	1	04/03/18 14:51	04/03/18 21:19	75-71-8	
Ethylbenzene	**<0.80**	ug/kg	4.3	0.80	1	04/03/18 14:51	04/03/18 21:19	100-41-4	
Hexachloro-1,3-butadiene	**<2.8**	ug/kg	10.9	2.8	1	04/03/18 14:51	04/03/18 21:19	87-68-3	
Methyl-tert-butyl ether	**<0.65**	ug/kg	4.3	0.65	1	04/03/18 14:51	04/03/18 21:19	1634-04-4	
Methylene Chloride	**<2.5**	ug/kg	21.7	2.5	1	04/03/18 14:51	04/03/18 21:19	75-09-2	
Naphthalene	**<1.6**	ug/kg	10.9	1.6	1	04/03/18 14:51	04/03/18 21:19	91-20-3	
Styrene	**<0.46**	ug/kg	4.3	0.46	1	04/03/18 14:51	04/03/18 21:19	100-42-5	
Tetrachloroethene	**<0.56**	ug/kg	4.3	0.56	1	04/03/18 14:51	04/03/18 21:19	127-18-4	
Tetrahydrofuran	**<9.9**	ug/kg	43.5	9.9	1	04/03/18 14:51	04/03/18 21:19	109-99-9	
Toluene	**<1.2**	ug/kg	4.3	1.2	1	04/03/18 14:51	04/03/18 21:19	108-88-3	
Trichloroethene	**<0.12**	ug/kg	4.3	0.12	1	04/03/18 14:51	04/03/18 21:19	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/kg	10.9	1.8	1	04/03/18 14:51	04/03/18 21:19	75-69-4	
Vinyl acetate	**<2.1**	ug/kg	10.9	2.1	1	04/03/18 14:51	04/03/18 21:19	108-05-4	
Vinyl chloride	**<1.0**	ug/kg	4.3	1.0	1	04/03/18 14:51	04/03/18 21:19	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: FD02-033018 **Lab ID: 10425720011** Collected: 03/30/18 08:30 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
cis-1,2-Dichloroethene	**<0.74**	ug/kg	4.3	0.74	1	04/03/18 14:51	04/03/18 21:19	156-59-2	
cis-1,3-Dichloropropene	**<2.0**	ug/kg	4.3	2.0	1	04/03/18 14:51	04/03/18 21:19	10061-01-5	
m&p-Xylene	**<1.1**	ug/kg	8.7	1.1	1	04/03/18 14:51	04/03/18 21:19	179601-23-1	
o-Xylene	**<0.52**	ug/kg	4.3	0.52	1	04/03/18 14:51	04/03/18 21:19	95-47-6	
trans-1,2-Dichloroethene	**<0.77**	ug/kg	4.3	0.77	1	04/03/18 14:51	04/03/18 21:19	156-60-5	
trans-1,3-Dichloropropene	**<0.80**	ug/kg	4.3	0.80	1	04/03/18 14:51	04/03/18 21:19	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-126		1	04/03/18 14:51	04/03/18 21:19	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/03/18 14:51	04/03/18 21:19	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-128		1	04/03/18 14:51	04/03/18 21:19	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Sample: Trip Blank **Lab ID: 10425720012** Collected: 03/30/18 00:00 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
1,1,1-Trichloroethane	**<0.75**	ug/kg	4.0	0.75	1	04/03/18 14:51	04/03/18 17:50	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.54**	ug/kg	4.0	0.54	1	04/03/18 14:51	04/03/18 17:50	79-34-5	
1,1,2-Trichloroethane	**<0.69**	ug/kg	4.0	0.69	1	04/03/18 14:51	04/03/18 17:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.72**	ug/kg	4.0	0.72	1	04/03/18 14:51	04/03/18 17:50	76-13-1	
1,1-Dichloroethane	**<0.72**	ug/kg	4.0	0.72	1	04/03/18 14:51	04/03/18 17:50	75-34-3	
1,1-Dichloroethene	**<0.57**	ug/kg	4.0	0.57	1	04/03/18 14:51	04/03/18 17:50	75-35-4	
1,2,4-Trichlorobenzene	**<1.6**	ug/kg	4.0	1.6	1	04/03/18 14:51	04/03/18 17:50	120-82-1	
1,2,4-Trimethylbenzene	**<0.19**	ug/kg	4.0	0.19	1	04/03/18 14:51	04/03/18 17:50	95-63-6	
1,2-Dibromoethane (EDB)	**<0.78**	ug/kg	4.0	0.78	1	04/03/18 14:51	04/03/18 17:50	106-93-4	
1,2-Dichlorobenzene	**<0.63**	ug/kg	4.0	0.63	1	04/03/18 14:51	04/03/18 17:50	95-50-1	
1,2-Dichloroethane	**<0.71**	ug/kg	4.0	0.71	1	04/03/18 14:51	04/03/18 17:50	107-06-2	
1,3,5-Trimethylbenzene	**<0.48**	ug/kg	4.0	0.48	1	04/03/18 14:51	04/03/18 17:50	108-67-8	
1,3-Dichlorobenzene	**<0.52**	ug/kg	4.0	0.52	1	04/03/18 14:51	04/03/18 17:50	541-73-1	
1,4-Dichlorobenzene	**<0.58**	ug/kg	4.0	0.58	1	04/03/18 14:51	04/03/18 17:50	106-46-7	
2-Butanone (MEK)	**<3.1**	ug/kg	20.0	3.1	1	04/03/18 14:51	04/03/18 17:50	78-93-3	
2-Hexanone	**<2.3**	ug/kg	20.0	2.3	1	04/03/18 14:51	04/03/18 17:50	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<2.6**	ug/kg	20.0	2.6	1	04/03/18 14:51	04/03/18 17:50	108-10-1	
Acetone	**<8.3**	ug/kg	50.0	8.3	1	04/03/18 14:51	04/03/18 17:50	67-64-1	
Benzene	**<0.55**	ug/kg	4.0	0.55	1	04/03/18 14:51	04/03/18 17:50	71-43-2	
Bromodichloromethane	**<0.63**	ug/kg	4.0	0.63	1	04/03/18 14:51	04/03/18 17:50	75-27-4	
Bromoform	**<2.6**	ug/kg	20.0	2.6	1	04/03/18 14:51	04/03/18 17:50	75-25-2	
Bromomethane	**<3.5**	ug/kg	20.0	3.5	1	04/03/18 14:51	04/03/18 17:50	74-83-9	
Carbon tetrachloride	**<0.56**	ug/kg	4.0	0.56	1	04/03/18 14:51	04/03/18 17:50	56-23-5	
Chlorobenzene	**<0.60**	ug/kg	4.0	0.60	1	04/03/18 14:51	04/03/18 17:50	108-90-7	
Chloroethane	**<1.6**	ug/kg	10.0	1.6	1	04/03/18 14:51	04/03/18 17:50	75-00-3	
Chloroform	**<0.78**	ug/kg	4.0	0.78	1	04/03/18 14:51	04/03/18 17:50	67-66-3	
Chloromethane	**<1.8**	ug/kg	10.0	1.8	1	04/03/18 14:51	04/03/18 17:50	74-87-3	
Dibromochloromethane	**<0.20**	ug/kg	4.0	0.20	1	04/03/18 14:51	04/03/18 17:50	124-48-1	
Dichlorodifluoromethane	**<3.8**	ug/kg	10.0	3.8	1	04/03/18 14:51	04/03/18 17:50	75-71-8	
Ethylbenzene	**<0.73**	ug/kg	4.0	0.73	1	04/03/18 14:51	04/03/18 17:50	100-41-4	
Hexachloro-1,3-butadiene	**<2.6**	ug/kg	10.0	2.6	1	04/03/18 14:51	04/03/18 17:50	87-68-3	
Methyl-tert-butyl ether	**<0.59**	ug/kg	4.0	0.59	1	04/03/18 14:51	04/03/18 17:50	1634-04-4	
Methylene Chloride	**<2.3**	ug/kg	20.0	2.3	1	04/03/18 14:51	04/03/18 17:50	75-09-2	
Naphthalene	**<1.4**	ug/kg	10.0	1.4	1	04/03/18 14:51	04/03/18 17:50	91-20-3	
Styrene	**<0.42**	ug/kg	4.0	0.42	1	04/03/18 14:51	04/03/18 17:50	100-42-5	
Tetrachloroethene	**<0.52**	ug/kg	4.0	0.52	1	04/03/18 14:51	04/03/18 17:50	127-18-4	
Tetrahydrofuran	**<9.1**	ug/kg	40.0	9.1	1	04/03/18 14:51	04/03/18 17:50	109-99-9	
Toluene	**<1.1**	ug/kg	4.0	1.1	1	04/03/18 14:51	04/03/18 17:50	108-88-3	
Trichloroethene	**<0.11**	ug/kg	4.0	0.11	1	04/03/18 14:51	04/03/18 17:50	79-01-6	
Trichlorofluoromethane	**<1.7**	ug/kg	10.0	1.7	1	04/03/18 14:51	04/03/18 17:50	75-69-4	
Vinyl acetate	**<1.9**	ug/kg	10.0	1.9	1	04/03/18 14:51	04/03/18 17:50	108-05-4	
Vinyl chloride	**<0.95**	ug/kg	4.0	0.95	1	04/03/18 14:51	04/03/18 17:50	75-01-4	
cis-1,2-Dichloroethene	**<0.68**	ug/kg	4.0	0.68	1	04/03/18 14:51	04/03/18 17:50	156-59-2	
cis-1,3-Dichloropropene	**<1.9**	ug/kg	4.0	1.9	1	04/03/18 14:51	04/03/18 17:50	10061-01-5	
m&p-Xylene	**<1.0**	ug/kg	8.0	1.0	1	04/03/18 14:51	04/03/18 17:50	179601-23-1	

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ANALYTICAL RESULTS

Project: 1497 Subslab Soil Gas and Soil

Pace Project No.: 10425720

Sample: Trip Blank **Lab ID: 10425720012** Collected: 03/30/18 00:00 Received: 03/31/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5035 Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035 Low								
o-Xylene	**<0.48**	ug/kg	4.0	0.48	1	04/03/18 14:51	04/03/18 17:50	95-47-6	
trans-1,2-Dichloroethene	**<0.71**	ug/kg	4.0	0.71	1	04/03/18 14:51	04/03/18 17:50	156-60-5	
trans-1,3-Dichloropropene	**<0.73**	ug/kg	4.0	0.73	1	04/03/18 14:51	04/03/18 17:50	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-126		1	04/03/18 14:51	04/03/18 17:50	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	04/03/18 14:51	04/03/18 17:50	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-128		1	04/03/18 14:51	04/03/18 17:50	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

QC Batch: 530093 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10425720001, 10425720002, 10425720003, 10425720004, 10425720005, 10425720006

SAMPLE DUPLICATE: 2877493

Parameter	Units	10425706002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.4	14.2	1	30	

SAMPLE DUPLICATE: 2877528

Parameter	Units	10425720005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.6	26.1	5	30	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

QC Batch: 530103 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10425720007, 10425720008, 10425720009, 10425720010, 10425720011

SAMPLE DUPLICATE: 2877512

Parameter	Units	10425720009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.9	23.4	2	30	

SAMPLE DUPLICATE: 2877803

Parameter	Units	10425572005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.3	4.3	0	30	

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

QC Batch: 530449 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035 Low Analysis Description: 8260B MSV 5035 Low Level
Associated Lab Samples: 10425720001, 10425720002, 10425720003, 10425720004, 10425720005, 10425720006, 10425720007, 10425720008, 10425720009, 10425720010, 10425720011, 10425720012

METHOD BLANK: 2879119 Matrix: Solid
Associated Lab Samples: 10425720001, 10425720002, 10425720003, 10425720004, 10425720005, 10425720006, 10425720007, 10425720008, 10425720009, 10425720010, 10425720011, 10425720012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<0.75	4.0	0.75	04/03/18 15:36	
1,1,2,2-Tetrachloroethane	ug/kg	<0.54	4.0	0.54	04/03/18 15:36	
1,1,2-Trichloroethane	ug/kg	<0.69	4.0	0.69	04/03/18 15:36	
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.72	4.0	0.72	04/03/18 15:36	
1,1-Dichloroethane	ug/kg	<0.72	4.0	0.72	04/03/18 15:36	
1,1-Dichloroethene	ug/kg	<0.57	4.0	0.57	04/03/18 15:36	
1,2,4-Trichlorobenzene	ug/kg	<1.6	4.0	1.6	04/03/18 15:36	
1,2,4-Trimethylbenzene	ug/kg	<0.19	4.0	0.19	04/03/18 15:36	
1,2-Dibromoethane (EDB)	ug/kg	<0.78	4.0	0.78	04/03/18 15:36	
1,2-Dichlorobenzene	ug/kg	<0.63	4.0	0.63	04/03/18 15:36	
1,2-Dichloroethane	ug/kg	<0.71	4.0	0.71	04/03/18 15:36	
1,3,5-Trimethylbenzene	ug/kg	<0.48	4.0	0.48	04/03/18 15:36	
1,3-Dichlorobenzene	ug/kg	<0.52	4.0	0.52	04/03/18 15:36	
1,4-Dichlorobenzene	ug/kg	<0.58	4.0	0.58	04/03/18 15:36	
2-Butanone (MEK)	ug/kg	<3.1	20.0	3.1	04/03/18 15:36	
2-Hexanone	ug/kg	<2.3	20.0	2.3	04/03/18 15:36	
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.6	20.0	2.6	04/03/18 15:36	
Acetone	ug/kg	<8.3	50.0	8.3	04/03/18 15:36	MN
Benzene	ug/kg	<0.55	4.0	0.55	04/03/18 15:36	
Bromodichloromethane	ug/kg	<0.63	4.0	0.63	04/03/18 15:36	
Bromoform	ug/kg	<2.6	20.0	2.6	04/03/18 15:36	
Bromomethane	ug/kg	<3.5	20.0	3.5	04/03/18 15:36	
Carbon tetrachloride	ug/kg	<0.56	4.0	0.56	04/03/18 15:36	
Chlorobenzene	ug/kg	<0.60	4.0	0.60	04/03/18 15:36	
Chloroethane	ug/kg	<1.6	10.0	1.6	04/03/18 15:36	
Chloroform	ug/kg	<0.78	4.0	0.78	04/03/18 15:36	
Chloromethane	ug/kg	<1.8	10.0	1.8	04/03/18 15:36	
cis-1,2-Dichloroethene	ug/kg	<0.68	4.0	0.68	04/03/18 15:36	
cis-1,3-Dichloropropene	ug/kg	<1.9	4.0	1.9	04/03/18 15:36	
Dibromochloromethane	ug/kg	<0.20	4.0	0.20	04/03/18 15:36	
Dichlorodifluoromethane	ug/kg	<3.8	10.0	3.8	04/03/18 15:36	
Ethylbenzene	ug/kg	<0.73	4.0	0.73	04/03/18 15:36	
Hexachloro-1,3-butadiene	ug/kg	<2.6	10.0	2.6	04/03/18 15:36	
m&p-Xylene	ug/kg	<1.0	8.0	1.0	04/03/18 15:36	
Methyl-tert-butyl ether	ug/kg	<0.59	4.0	0.59	04/03/18 15:36	
Methylene Chloride	ug/kg	<2.3	20.0	2.3	04/03/18 15:36	
Naphthalene	ug/kg	<1.4	10.0	1.4	04/03/18 15:36	
o-Xylene	ug/kg	<0.48	4.0	0.48	04/03/18 15:36	
Styrene	ug/kg	<0.42	4.0	0.42	04/03/18 15:36	
Tetrachloroethene	ug/kg	<0.52	4.0	0.52	04/03/18 15:36	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

METHOD BLANK: 2879119 Matrix: Solid

Associated Lab Samples: 10425720001, 10425720002, 10425720003, 10425720004, 10425720005, 10425720006, 10425720007, 10425720008, 10425720009, 10425720010, 10425720011, 10425720012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	ug/kg	<9.1	40.0	9.1	04/03/18 15:36	
Toluene	ug/kg	<1.1	4.0	1.1	04/03/18 15:36	
trans-1,2-Dichloroethene	ug/kg	<0.71	4.0	0.71	04/03/18 15:36	
trans-1,3-Dichloropropene	ug/kg	<0.73	4.0	0.73	04/03/18 15:36	
Trichloroethene	ug/kg	<0.11	4.0	0.11	04/03/18 15:36	
Trichlorofluoromethane	ug/kg	<1.7	10.0	1.7	04/03/18 15:36	
Vinyl acetate	ug/kg	<1.9	10.0	1.9	04/03/18 15:36	
Vinyl chloride	ug/kg	<0.95	4.0	0.95	04/03/18 15:36	
1,2-Dichloroethane-d4 (S)	%.	94	75-126		04/03/18 15:36	
4-Bromofluorobenzene (S)	%.	101	75-128		04/03/18 15:36	
Toluene-d8 (S)	%.	100	75-125		04/03/18 15:36	

LABORATORY CONTROL SAMPLE & LCSD: 2879120 2879121

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	20	17.9	18.7	90	94	75-125	5	20	
1,1,2,2-Tetrachloroethane	ug/kg	20	18.8	18.9	94	94	67-125	1	20	
1,1,2-Trichloroethane	ug/kg	20	18.3	18.9	92	94	75-125	3	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	20	17.4	17.4	87	87	70-125	0	20	
1,1-Dichloroethane	ug/kg	20	16.7	17.8	84	89	70-125	6	20	
1,1-Dichloroethene	ug/kg	20	17.4	17.8	87	89	67-125	2	20	
1,2,4-Trichlorobenzene	ug/kg	20	18.1	18.2	91	91	75-125	0	20	
1,2,4-Trimethylbenzene	ug/kg	20	17.9	18.1	89	90	75-125	1	20	
1,2-Dibromoethane (EDB)	ug/kg	20	17.4	18.3	87	92	75-125	5	20	
1,2-Dichlorobenzene	ug/kg	20	18.1	18.8	91	94	75-125	4	20	
1,2-Dichloroethane	ug/kg	20	16.6	17.6	83	88	74-125	6	20	
1,3,5-Trimethylbenzene	ug/kg	20	17.9	18.0	89	90	75-125	1	20	
1,3-Dichlorobenzene	ug/kg	20	18.2	18.1	91	91	75-125	0	20	
1,4-Dichlorobenzene	ug/kg	20	17.7	17.9	89	89	75-125	1	20	
2-Butanone (MEK)	ug/kg	100	84.5	93.6	85	94	56-134	10	20	
2-Hexanone	ug/kg	100	86.5	94.4	87	94	71-125	9	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	88.3	96.3	88	96	71-125	9	20	
Acetone	ug/kg	100	98.1	102	98	102	30-150	4	20	
Benzene	ug/kg	20	17.3	17.9	86	89	69-125	3	20	
Bromodichloromethane	ug/kg	20	17.9	19.0	90	95	75-125	6	20	
Bromoform	ug/kg	20	17.7J	18.8J	88	94	75-125		20	
Bromomethane	ug/kg	20	22.0	21.5	110	108	67-131	2	20	
Carbon tetrachloride	ug/kg	20	16.8	17.1	84	85	75-125	2	20	
Chlorobenzene	ug/kg	20	17.7	18.3	89	91	75-125	3	20	
Chloroethane	ug/kg	20	19.4	19.4	97	97	63-125	0	20	
Chloroform	ug/kg	20	18.1	18.9	90	94	75-125	4	20	
Chloromethane	ug/kg	20	18.9	19.3	95	97	30-150	2	20	
cis-1,2-Dichloroethene	ug/kg	20	18.0	18.9	90	94	72-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

LABORATORY CONTROL SAMPLE & LCSD: 2879120 2879121

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
cis-1,3-Dichloropropene	ug/kg	20	17.8	19.0	89	95	73-125	7	20	
Dibromochloromethane	ug/kg	20	18.2	19.0	91	95	75-125	4	20	
Dichlorodifluoromethane	ug/kg	20	18.3	18.3	91	92	55-134	0	20	
Ethylbenzene	ug/kg	20	17.3	17.4	87	87	75-125	1	20	
Hexachloro-1,3-butadiene	ug/kg	20	18.1	17.7	91	89	75-125	2	20	
m&p-Xylene	ug/kg	40	36.0	35.6	90	89	75-125	1	20	
Methyl-tert-butyl ether	ug/kg	20	18.2	19.2	91	96	70-125	5	20	
Methylene Chloride	ug/kg	20	17.5J	18.8J	88	94	58-134		20	
Naphthalene	ug/kg	20	17.8	19.2	89	96	66-125	8	20	
o-Xylene	ug/kg	20	18.1	18.5	90	93	75-125	3	20	
Styrene	ug/kg	20	18.0	18.6	90	93	75-125	3	20	
Tetrachloroethene	ug/kg	20	17.1	17.0	85	85	72-125	1	20	
Tetrahydrofuran	ug/kg	200	180	189	90	95	36-146	5	20	
Toluene	ug/kg	20	18.0	18.5	90	92	75-125	2	20	
trans-1,2-Dichloroethene	ug/kg	20	17.0	17.4	85	87	69-125	2	20	
trans-1,3-Dichloropropene	ug/kg	20	19.1	20.0	95	100	75-125	5	20	
Trichloroethene	ug/kg	20	17.7	18.8	88	94	75-125	6	20	
Trichlorofluoromethane	ug/kg	20	18.1	18.6	91	93	72-127	2	20	
Vinyl acetate	ug/kg	20	22.0	20.0	110	100	69-125	10	20	
Vinyl chloride	ug/kg	20	18.5	18.9	92	95	67-127	2	20	
1,2-Dichloroethane-d4 (S)	%.				96	98	75-126			
4-Bromofluorobenzene (S)	%.				102	102	75-128			
Toluene-d8 (S)	%.				99	99	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879122 2879123

Parameter	Units	10425720009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	<0.72	19.1	20.4	30.0	31.7	158	156	34-150	5	30	M1
1,1,2,2-Tetrachloroethane	ug/kg	<0.52	19.1	20.4	30.4	31.0	160	152	32-148	2	30	M1
1,1,2-Trichloroethane	ug/kg	<0.66	19.1	20.4	29.5	30.2	155	148	55-150	2	30	M1
1,1,2-Trichlorotrifluoroethane	ug/kg	<0.69	19.1	20.4	31.8	33.0	167	162	30-150	4	30	M1
1,1-Dichloroethane	ug/kg	<0.68	19.1	20.4	28.2	29.0	148	142	30-150	3	30	
1,1-Dichloroethene	ug/kg	<0.55	19.1	20.4	30.3	31.4	159	154	30-150	4	30	M1
1,2,4-Trichlorobenzene	ug/kg	<1.5	19.1	20.4	15.4	18.7	81	92	30-144	20	30	
1,2,4-Trimethylbenzene	ug/kg	<0.19	19.1	20.4	21.1	24.7	111	121	30-150	16	30	
1,2-Dibromoethane (EDB)	ug/kg	<0.75	19.1	20.4	29.5	29.4	155	144	46-148	0	30	M1
1,2-Dichlorobenzene	ug/kg	<0.60	19.1	20.4	20.3	23.2	107	114	30-147	13	30	
1,2-Dichloroethane	ug/kg	<0.67	19.1	20.4	28.9	29.1	151	143	40-150	1	30	M1
1,3,5-Trimethylbenzene	ug/kg	<0.46	19.1	20.4	22.1	25.8	116	127	30-150	15	30	
1,3-Dichlorobenzene	ug/kg	<0.49	19.1	20.4	19.9	22.9	105	113	30-150	14	30	
1,4-Dichlorobenzene	ug/kg	<0.55	19.1	20.4	19.0	22.0	100	108	30-149	14	30	
2-Butanone (MEK)	ug/kg	<2.9	95.3	102	181	178	190	175	30-150	1	30	M1
2-Hexanone	ug/kg	<2.2	95.3	102	173	172	181	169	70-130	1	30	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879122 2879123

Parameter	Units	10425720009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Methyl-2-pentanone (MIBK)	ug/kg	<2.5	95.3	102	182	180	191	176	30-150	2	30	M1
Acetone	ug/kg	<7.9	95.3	102	385	372	405	365	30-150	4	30	M1
Benzene	ug/kg	<0.53	19.1	20.4	28.0	29.2	146	142	39-150	4	30	
Bromodichloromethane	ug/kg	<0.60	19.1	20.4	29.0	30.3	152	149	41-150	4	30	M1
Bromoform	ug/kg	<2.5	19.1	20.4	28.5	29.4	149	144	34-150	3	30	
Bromomethane	ug/kg	<3.3	19.1	20.4	31.2	24.6	164	121	45-150	24	30	M1
Carbon tetrachloride	ug/kg	<0.53	19.1	20.4	29.2	30.1	152	147	30-150	3	30	M1
Chlorobenzene	ug/kg	<0.57	19.1	20.4	24.8	26.4	130	130	56-143	6	30	
Chloroethane	ug/kg	<1.5	19.1	20.4	32.9	19.5	173	96	42-150	51	30	M1,R1
Chloroform	ug/kg	<0.75	19.1	20.4	30.4	31.2	160	153	37-150	3	30	M1
Chloromethane	ug/kg	<1.7	19.1	20.4	33.2	22.5	174	110	31-150	38	30	M1,R1
cis-1,2-Dichloroethene	ug/kg	<0.65	19.1	20.4	29.6	30.1	155	148	44-150	2	30	M1
cis-1,3-Dichloropropene	ug/kg	<1.8	19.1	20.4	28.4	29.4	149	144	49-133	3	30	M1
Dibromochloromethane	ug/kg	<0.19	19.1	20.4	29.6	30.0	155	147	46-150	1	30	M1
Dichlorodifluoromethane	ug/kg	<3.6	19.1	20.4	35.5	23.8	186	117	30-150	40	30	M1,R1
Ethylbenzene	ug/kg	<0.70	19.1	20.4	24.1	26.9	126	132	46-148	11	30	
Hexachloro-1,3-butadiene	ug/kg	<2.5	19.1	20.4	17.9	24.7	94	121	30-150	32	30	R1
m&p-Xylene	ug/kg	<1.0	38.1	40.8	48.8	53.8	128	132	37-150	10	30	
Methyl-tert-butyl ether	ug/kg	<0.57	19.1	20.4	33.2	30.9	174	152	46-150	7	30	M1
Methylene Chloride	ug/kg	<2.2	19.1	20.4	28.4	28.5	149	140	32-150	0	30	
Naphthalene	ug/kg	<1.4	19.1	20.4	16.4	17.3	85	84	30-125	5	30	
o-Xylene	ug/kg	<0.46	19.1	20.4	24.7	27.4	130	135	37-145	11	30	
Styrene	ug/kg	<0.40	19.1	20.4	23.8	25.4	125	125	43-136	7	30	
Tetrachloroethene	ug/kg	<0.49	19.1	20.4	25.3	28.4	133	140	33-150	11	30	
Tetrahydrofuran	ug/kg	<8.7	191	204	682	616	358	303	65-149	10	30	M1
Toluene	ug/kg	<1.0	19.1	20.4	27.2	29.0	143	142	41-150	6	30	
trans-1,2-Dichloroethene	ug/kg	<0.67	19.1	20.4	28.0	29.4	147	144	33-150	5	30	
trans-1,3-Dichloropropene	ug/kg	<0.70	19.1	20.4	29.5	29.6	155	146	54-142	0	30	M1
Trichloroethene	ug/kg	<0.11	19.1	20.4	27.0	29.3	142	144	41-150	8	30	
Trichlorofluoromethane	ug/kg	<1.6	19.1	20.4	34.2	21.7	179	107	33-150	45	30	M1,R1
Vinyl acetate	ug/kg	<1.8	19.1	20.4	38.6	36.5	202	179	70-130	6	30	M1
Vinyl chloride	ug/kg	<0.90	19.1	20.4	32.8	21.7	172	106	36-150	41	30	M1,R1
1,2-Dichloroethane-d4 (S)	%.						110	110	75-126			
4-Bromofluorobenzene (S)	%.						100	100	75-128			
Toluene-d8 (S)	%.						98	97	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project:	1497 Subslab Soil Gas and Soil
Pace Project No.:	10425720

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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Minneapolis, MN 55414
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METHOD CROSS REFERENCE TABLE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5035 Low Level	Solid	SW-846 8260B	SW-846 5035A/5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Subslab Soil Gas and Soil
Pace Project No.: 10425720

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10425720001	**SV108-S-0-033018**	ASTM D2974	530093		
10425720002	**SV108-S-3-033018**	ASTM D2974	530093		
10425720003	**SV109-S-0-033018**	ASTM D2974	530093		
10425720004	**SV109-S-3-033018**	ASTM D2974	530093		
10425720005	**SV112-S-0-033018**	ASTM D2974	530093		
10425720006	**SV112-S-3-033018**	ASTM D2974	530093		
10425720007	**SV113-S-0-033018**	ASTM D2974	530103		
10425720008	**SV113-S-1.5-033018**	ASTM D2974	530103		
10425720009	**SV114-S-3-033018**	ASTM D2974	530103		
10425720010	**FD01-033018**	ASTM D2974	530103		
10425720011	**FD02-033018**	ASTM D2974	530103		
10425720001	**SV108-S-0-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720002	**SV108-S-3-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720003	**SV109-S-0-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720004	**SV109-S-3-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720005	**SV112-S-0-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720006	**SV112-S-3-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720007	**SV113-S-0-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720008	**SV113-S-1.5-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720009	**SV114-S-3-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720010	**FD01-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720011	**FD02-033018**	EPA 5035 Low	530449	EPA 8260B	530600
10425720012	**Trip Blank**	EPA 5035 Low	530449	EPA 8260B	530600

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b

WO#: 10425720

10425720

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Subslab Soil Gas and Soil Sampling	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 3***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	8260 Full List	Dry Weight	
1	SV108-S-0-033018	SL	G	3/30	950	—	—	—	5	X				X	X		X	X	001
2	SV108-S-3-033018				1005	—	—	—	5	X				X	X		X	X	002
3	SV109-S-0-033018				1020	—	—	—	5	X				X	X		X	X	003
4	SV109-S-3-033018				1035	—	—	—	5	X				X	X		X	X	004
5	SV112-S-0-033018				1050	—	—	—	5	X				X	X		X	X	005
6	SV112-S-3-033018				1105	—	—	—	5	X				X	X		X	X	006
7	SV113-S-0-033018				1110	—	—	—	5	X				X	X		X	X	007
8	SV113-S-1.5-033018				1115	—	—	—	5	X				X	X		X	X	008
9	SV114-S-3-033018				1215	—	—	—	15	X				X	X		X	X	MS/MSD 009
10	F001-033018				800	—	—	—	5	X				X	X		X	X	010
11	F002-033018				830	—	—	—	5	X				X	X		X	X	011
12	Trip Blank			—	—	—	—	—	4	X				X	X		X	X	012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	/CH2M	3/30/18	1730	Pace	3-31-18	915	3.1	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

JE

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER:

DATE Signed: 3/30/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10425720
PM: JMG **Due Date: 04/16/18**
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7448 1032 7988

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☒Other: Foam **Temp Blank?** ☐Yes ☒No

Thermometer Used: ☐151401163 ☒G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 2.9 **Cooler Temp Corrected (°C):** 3.1 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:**

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used? -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		9.
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒Yes	☐No		12. no DWC after sample 005 use filled vials
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
3 Trip Blanks Present? Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): 073117-3	☒Yes ☒Yes	☐No ☐No	☐N/A ☐N/A	15.

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 12:00	Temp: 2.9	Corrected Temp: 3.1
Time: 1220	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance sar ... n will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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April 16, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426000

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
California Certification #2973
Montana Certificate #CERT0103
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426000001	**Lang-GW-040318**	Water	04/03/18 09:45	04/04/18 09:50

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426000001	**Lang-GW-040318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426000001	**Lang-GW-040318**					
RSK 175	Ethene	1.3J	ug/L	10.0	04/09/18 12:43	
RSK 175	Methane	3.5J	ug/L	10.0	04/09/18 12:43	
EPA 6010D	Aluminum, Dissolved	9.6J	ug/L	200	04/12/18 12:58	
EPA 6010D	Barium, Dissolved	19.1	ug/L	10.0	04/12/18 12:58	
EPA 6010D	Calcium, Dissolved	45400	ug/L	500	04/12/18 12:58	
EPA 6010D	Copper, Dissolved	6.8J	ug/L	10.0	04/12/18 12:58	
EPA 6010D	Iron, Dissolved	257	ug/L	50.0	04/12/18 12:58	
EPA 6010D	Magnesium, Dissolved	13200	ug/L	500	04/12/18 12:58	
EPA 6010D	Manganese, Dissolved	12.7	ug/L	5.0	04/12/18 12:58	
EPA 6010D	Potassium, Dissolved	1280J	ug/L	2500	04/12/18 12:58	
EPA 6010D	Sodium, Dissolved	17900	ug/L	1000	04/12/18 12:58	
EPA 6010D	Vanadium, Dissolved	5.5J	ug/L	15.0	04/12/18 12:58	
EPA 6010D	Zinc, Dissolved	73.4	ug/L	20.0	04/12/18 12:58	
SM 2320B	Alkalinity, Total as CaCO3	199	mg/L	5.0	04/12/18 10:57	
SM 2540C	Total Dissolved Solids	239	mg/L	10.0	04/09/18 15:38	
EPA 300.0	Chloride	1.8	mg/L	1.2	04/04/18 21:24	B
EPA 300.0	Nitrate as N	0.44	mg/L	0.10	04/04/18 21:24	
EPA 300.0	Sulfate	2.3	mg/L	1.2	04/04/18 21:24	
EPA 353.2	Nitrogen, NO2 plus NO3	0.49	mg/L	0.020	04/05/18 13:04	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426000

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 530597

B: Analyte was detected in the associated method blank.

- BLANK for HBN 530597 [WETA/346 (Lab ID: 2879790)
  - Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 530597

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10425972004,10425981001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2879794)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2879793)
  - Chloride
- MSD (Lab ID: 2879795)
  - Chloride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 530844

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2881471)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2881472)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Sample: Lang-GW-040318 **Lab ID: 10426000001** Collected: 04/03/18 09:45 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		04/09/18 12:43	74-84-0	
Ethene	**1.3J**	ug/L	10.0	0.68	1		04/09/18 12:43	74-85-1	
Methane	**3.5J**	ug/L	10.0	1.1	1		04/09/18 12:43	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**9.6J**	ug/L	200	8.6	1	04/12/18 10:13	04/12/18 12:58	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	04/12/18 10:13	04/12/18 12:58	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	04/12/18 10:13	04/12/18 12:58	7440-38-2	
Barium, Dissolved	**19.1**	ug/L	10.0	0.22	1	04/12/18 10:13	04/12/18 12:58	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	04/12/18 10:13	04/12/18 12:58	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	04/12/18 10:13	04/12/18 12:58	7440-43-9	
Calcium, Dissolved	**45400**	ug/L	500	24.7	1	04/12/18 10:13	04/12/18 12:58	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	04/12/18 10:13	04/12/18 12:58	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	04/12/18 10:13	04/12/18 12:58	7440-48-4	
Copper, Dissolved	**6.8J**	ug/L	10.0	0.83	1	04/12/18 10:13	04/12/18 12:58	7440-50-8	
Iron, Dissolved	**257**	ug/L	50.0	16.7	1	04/12/18 10:13	04/12/18 12:58	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	04/12/18 10:13	04/12/18 12:58	7439-92-1	
Magnesium, Dissolved	**13200**	ug/L	500	2.6	1	04/12/18 10:13	04/12/18 12:58	7439-95-4	
Manganese, Dissolved	**12.7**	ug/L	5.0	0.38	1	04/12/18 10:13	04/12/18 12:58	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	04/12/18 10:13	04/12/18 12:58	7440-02-0	
Potassium, Dissolved	**1280J**	ug/L	2500	126	1	04/12/18 10:13	04/12/18 12:58	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	04/12/18 10:13	04/12/18 12:58	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	04/12/18 10:13	04/12/18 12:58	7440-22-4	
Sodium, Dissolved	**17900**	ug/L	1000	44.6	1	04/12/18 10:13	04/12/18 12:58	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	04/12/18 10:13	04/12/18 12:58	7440-28-0	
Vanadium, Dissolved	**5.5J**	ug/L	15.0	0.42	1	04/12/18 10:13	04/12/18 12:58	7440-62-2	
Zinc, Dissolved	**73.4**	ug/L	20.0	1.8	1	04/12/18 10:13	04/12/18 12:58	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	04/12/18 09:05	04/12/18 14:27	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**199**	mg/L	5.0	1.4	1		04/12/18 10:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**239**	mg/L	10.0	5.0	1		04/09/18 15:38		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		04/06/18 13:05	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.8**	mg/L	1.2	0.14	1		04/04/18 21:24	16887-00-6	B
Nitrate as N	**0.44**	mg/L	0.10	0.0079	1		04/04/18 21:24	14797-55-8	
Sulfate	**2.3**	mg/L	1.2	0.27	1		04/04/18 21:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Sample: Lang-GW-040318 **Lab ID: 10426000001** Collected: 04/03/18 09:45 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.49**	mg/L	0.020	0.0075	1		04/05/18 13:04		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	04/06/18 11:06	04/06/18 16:59		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**<0.20**	mg/L	1.0	0.20	1		04/07/18 01:11	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531284 — Analysis Method: RSK 175
QC Batch Method: RSK 175 — Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10426000001

METHOD BLANK: 2884856 — Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	04/09/18 08:36	
Ethene	ug/L	<0.68	10.0	0.68	04/09/18 08:36	
Methane	ug/L	5.8J	10.0	1.1	04/09/18 08:36	

LABORATORY CONTROL SAMPLE & LCSD: 2884857 2884858

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	106	112	93	98	85-115	5	20	
Ethene	ug/L	106	98.9	104	93	98	85-115	5	20	
Methane	ug/L	60.7	59.7	62.6	98	103	85-115	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884859 2884860

Parameter	Units	60267218003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	ND	114	114	106	21.6	92	18	30-150	132	20	R1
Ethene	ug/L	ND	106	106	103	22.8	96	21	30-150	127	20	R1
Methane	ug/L	11.0	60.7	60.7	69.0	22.6	96	19	30-150	101	20	R1

SAMPLE DUPLICATE: 2884861

Parameter	Units	7585147007 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	0.0046J mg/L	6.8J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531957 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10426000001

METHOD BLANK: 2888874 | Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	04/12/18 14:23	

LABORATORY CONTROL SAMPLE: 2888875

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888876 2888877

Parameter	Units	10426925002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.5	5.5	110	110	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531945
Analysis Method: EPA 6010D
QC Batch Method: EPA 3010
Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10426000001

METHOD BLANK: 2888827
Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	04/12/18 12:52	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	04/12/18 12:52	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	04/12/18 12:52	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	04/12/18 12:52	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	04/12/18 12:52	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	04/12/18 12:52	
Calcium, Dissolved	ug/L	<24.7	500	24.7	04/12/18 12:52	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	04/12/18 12:52	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	04/12/18 12:52	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	04/12/18 12:52	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	04/12/18 12:52	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	04/12/18 12:52	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	04/12/18 12:52	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	04/12/18 12:52	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	04/12/18 12:52	
Potassium, Dissolved	ug/L	<126	2500	126	04/12/18 12:52	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	04/12/18 12:52	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	04/12/18 12:52	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	04/12/18 12:52	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	04/12/18 12:52	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	04/12/18 12:52	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	04/12/18 12:52	

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	108	80-120	
Antimony, Dissolved	ug/L	1000	1030	103	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1040	104	80-120	
Beryllium, Dissolved	ug/L	1000	1040	104	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	1020	102	80-120	
Iron, Dissolved	ug/L	20000	20600	103	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Magnesium, Dissolved	ug/L	20000	20400	102	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20500	103	80-120	
Selenium, Dissolved	ug/L	1000	1090	109	80-120	
Silver, Dissolved	ug/L	500	500	100	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	992	99	80-120	
Zinc, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888829 2888830

Parameter	Units	10426000001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	9.6J	20000	20000	21700	21800	109	109	75-125	0	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1030	1040	103	104	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	103	104	75-125	0	20	
Barium, Dissolved	ug/L	19.1	1000	1000	1050	1060	103	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	0	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	0	20	
Calcium, Dissolved	ug/L	45400	20000	20000	64400	64900	95	97	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	1010	1010	101	101	75-125	0	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	1000	1000	100	100	75-125	0	20	
Copper, Dissolved	ug/L	6.8J	1000	1000	1030	1040	103	103	75-125	0	20	
Iron, Dissolved	ug/L	257	20000	20000	20600	20700	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1030	1030	102	103	75-125	0	20	
Magnesium, Dissolved	ug/L	13200	20000	20000	33600	33800	102	103	75-125	1	20	
Manganese, Dissolved	ug/L	12.7	1000	1000	1040	1040	103	103	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	998	999	100	100	75-125	0	20	
Potassium, Dissolved	ug/L	1280J	20000	20000	22500	22700	106	107	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1090	1080	109	108	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	503	505	101	101	75-125	0	20	
Sodium, Dissolved	ug/L	17900	20000	20000	37700	38100	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	1000	1010	100	101	75-125	0	20	
Vanadium, Dissolved	ug/L	5.5J	1000	1000	996	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	73.4	1000	1000	1000	1000	93	93	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531996 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10426000001

METHOD BLANK: 2888961 — Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	04/12/18 09:23	

LABORATORY CONTROL SAMPLE & LCSD: 2888962 2888963

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.2	42.1	103	105	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888964 2888965

Parameter	Units	10425877001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	90.8	40	40	134	129	108	96	80-120	4	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888966 2888967

Parameter	Units	10425877002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	92.0	40	40	134	135	104	108	80-120	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531352
Analysis Method: SM 2540C
QC Batch Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10426000001

METHOD BLANK: 2885067
Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	04/09/18 15:38	

LABORATORY CONTROL SAMPLE & LCSD: 2885068 2885069

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	982	966	98	97	80-120	2	10	

SAMPLE DUPLICATE: 2885070

Parameter	Units	10426291001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	890	980	10	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 106177 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10426000001

METHOD BLANK: 457643 | Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	04/06/18 13:02	

LABORATORY CONTROL SAMPLE: 457644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	94	90-110	

MATRIX SPIKE SAMPLE: 457646

Parameter	Units	10426000001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.18	93	75-125	

SAMPLE DUPLICATE: 457645

Parameter	Units	10426000001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 530597
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10426000001

METHOD BLANK: 2879790 Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31J	1.2	0.14	04/04/18 12:00	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	04/04/18 12:00	
Sulfate	mg/L	<0.27	1.2	0.27	04/04/18 12:00	

LABORATORY CONTROL SAMPLE: 2879791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.7	93	90-110	
Nitrate as N	mg/L	1	0.97	97	90-110	
Sulfate	mg/L	12.5	11.8	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879792 2879793

Parameter	Units	10425972004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.7	12.5	12.5	15.1	14.7	91	88	90-110	2	20	M1
Nitrate as N	mg/L	0.20	1	1	1.2	1.2	98	95	90-110	2	20	
Sulfate	mg/L	3.3	12.5	12.5	15.1	14.7	95	92	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879794 2879795

Parameter	Units	10425981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.1	12.5	12.5	18.6	18.7	84	85	90-110	1	20	M1
Nitrate as N	mg/L	0.29	1	1	1.3	1.3	96	97	90-110	1	20	
Sulfate	mg/L	58.5	12.5	12.5	62.0	62.0	28	28	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 530844 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10426000001

METHOD BLANK: 2881469 Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	04/05/18 13:09	FS

LABORATORY CONTROL SAMPLE: 2881470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2881471 2881472

Parameter	Units	10425432006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	118	100	100	209	217	91	99	90-110	4	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2881473 2881474

Parameter	Units	10425612001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.95	0.96	95	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 531060 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10426000001

METHOD BLANK: 2883440 | Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	04/06/18 16:57	

LABORATORY CONTROL SAMPLE: 2883441

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2883442 2883443

Parameter	Units	10426013001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	250	250	256	259	98	100	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

QC Batch: 140134 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10426000001

METHOD BLANK: 554979 | Matrix: Water
Associated Lab Samples: 10426000001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	04/06/18 23:06	

LABORATORY CONTROL SAMPLE: 554980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 554981 554982

Parameter	Units	10425853001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.3	25.3	101	101	80-120	0	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426000

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426000001	**Lang-GW-040318**	RSK 175	531284		
10426000001	**Lang-GW-040318**	EPA 3010	531945	EPA 6010D	532046
10426000001	**Lang-GW-040318**	EPA 7470A	531957	EPA 7470A	532074
10426000001	**Lang-GW-040318**	SM 2320B	531996		
10426000001	**Lang-GW-040318**	SM 2540C	531352		
10426000001	**Lang-GW-040318**	SM 4500-S-2 D	106177		
10426000001	**Lang-GW-040318**	EPA 300.0	530597		
10426000001	**Lang-GW-040318**	EPA 353.2	530844		
10426000001	**Lang-GW-040318**	EPA 410.4	531060	EPA 410.4	531175
10426000001	**Lang-GW-040318**	SM 5310C	140134		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

WO#: 10426000

10426000

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Lang-GW-040318	WT	G	4/3	945	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		48 hr hold	001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	4/3/18	1730	[signature] Pace	4/4/18	950	3.0	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/3/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI** Document No.: **F-MN-L-210-rev.24**	Document Revised: 18Dec2017 Page 1 of 2 Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10426000
PM: JMG **Due Date: 04/18/18**
CLIENT: UPRR_CH2M

Optional: Proj. Due Date: Proj. Name:

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7222 2740 1312

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.8 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** RG 4/4/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1 — 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. NOTE: NO Head space in RSK - Needs Head space
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

RG 4/4/18

Comments/Resolution:

Temp Log: Temp must be maintained at ≤6°C during login, record temp every 20 mins		
Opened Time: 0920	Temp: 3.0	Corrected Temp: 3.0
Time: 10:32	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/04/18

Note: Whenever there is a discrepancy affecting North Carolina compli[...] orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2074006

2074006

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426000 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 4/4/2018 Results Requested By: 4/18/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	Lang-GW-040318	PS	4/3/2018 09:45	10426000001	Water	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	4/04/18 1655		
2	Fed Ex	4-5-18 0830	J miller / Pace	4-5-18 0830
3				

Comments

Cooler Temperature on Receipt 4.4 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

WO# : 2074006
PM: CMM Due Date: 04/18/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/6/18 jmb

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☑ Yes	☐ No	☐ N/A	1
Chain of Custody Present:	☑ Yes	☐ No	☐ N/A	2
Chain of Custody Complete:	☑ Yes	☐ No	☐ N/A	3
Chain of Custody Relinquished:	☑ Yes	☐ No	☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes	☑ No	☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes	☐ No	☐ N/A	6
Sufficient Volume:	☑ Yes	☐ No	☐ N/A	7
Correct Containers Used:	☑ Yes	☐ No	☐ N/A	8 500 plastic
Filtered vol. Rec. for Diss. tests	☐ Yes	☐ No	☑ N/A	9
Sample Labels match COC:	☑ Yes	☐ No	☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes	☐ No	☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes	☐ No	☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes	☐ No	☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes	☐ No	☑ N/A	14
Trip Blank Present:	☐ Yes	☑ No		15

Client Notification/ Resolution:

Person Contacted: __________ Date/Time: __________

Comments/ Resolution: __________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

WO#:12106737
12106737

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426000 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 4/4/2018 Results Requested By: 4/18/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	Lang-GW-040318	PS	4/3/2018 09:45	10426000001	Water	2	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] PACE	4/04/18 1730	CB	4/4/18 1830	
2	CB	4/4/18 2300	B. Mathers	4/5/18 0715	
3					

Cooler Temperature on Receipt 2.6 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace - Mpls.

Project #:

WO# : 12106737
PM: HRZ Due Date: 04/18/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.3 Cooler Temp Corrected °C: 2.6 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: 4/4/18 GJ

Comments: BM 4/5/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 11, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426001

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426001001	**Lang-GW-040318**	Water	04/03/18 09:45	04/04/18 09:50

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426001001	**Lang-GW-040318**	EPA 8260B	AEZ	83	PASI-M

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 11, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 531313

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10426628001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2886008)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 2886009)
  - Acetone
  - Tetrahydrofuran

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Sample: Lang-GW-040318 **Lab ID: 10426001001** Collected: 04/03/18 09:45 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		04/09/18 17:34	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:34	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		04/09/18 17:34	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		04/09/18 17:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		04/09/18 17:34	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:34	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:34	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		04/09/18 17:34	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:34	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		04/09/18 17:34	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	10.0	1.0	1		04/09/18 17:34	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		04/09/18 17:34	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 17:34	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:34	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		04/09/18 17:34	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		04/09/18 17:34	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:34	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:34	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		04/09/18 17:34	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		04/09/18 17:34	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		04/09/18 17:34	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		04/09/18 17:34	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		04/09/18 17:34	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:34	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		04/09/18 17:34	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		04/09/18 17:34	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		04/09/18 17:34	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		04/09/18 17:34	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		04/09/18 17:34	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:34	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 17:34	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:34	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		04/09/18 17:34	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		04/09/18 17:34	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		04/09/18 17:34	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:34	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		04/09/18 17:34	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		04/09/18 17:34	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		04/09/18 17:34	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		04/09/18 17:34	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Sample: Lang-GW-040318 **Lab ID: 10426001001** Collected: 04/03/18 09:45 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		04/09/18 17:34	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		04/09/18 17:34	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 17:34	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		04/09/18 17:34	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		04/09/18 17:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		04/09/18 17:34	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		04/09/18 17:34	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:34	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		04/09/18 17:34	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		04/09/18 17:34	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		04/09/18 17:34	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		04/09/18 17:34	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		04/09/18 17:34	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		04/09/18 17:34	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:34	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		04/09/18 17:34	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		04/09/18 17:34	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:34	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:34	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		04/09/18 17:34	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:34	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:34	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:34	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		04/09/18 17:34	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:34	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 17:34	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		04/09/18 17:34	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		04/09/18 17:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		04/09/18 17:34	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		04/09/18 17:34	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		04/09/18 17:34	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

QC Batch: 531313 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10426001001

METHOD BLANK: 2884933 Matrix: Water
Associated Lab Samples: 10426001001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	04/09/18 12:50	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	04/09/18 12:50	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	04/09/18 12:50	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	04/09/18 12:50	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	04/09/18 12:50	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	04/09/18 12:50	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	10.0	1.0	04/09/18 12:50	MN
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	04/09/18 12:50	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	04/09/18 12:50	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	04/09/18 12:50	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	04/09/18 12:50	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	04/09/18 12:50	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	04/09/18 12:50	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	04/09/18 12:50	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	04/09/18 12:50	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	04/09/18 12:50	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
2-Hexanone	ug/L	<2.5	5.0	2.5	04/09/18 12:50	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	04/09/18 12:50	
Acetone	ug/L	<8.8	20.0	8.8	04/09/18 12:50	
Acrolein	ug/L	<4.8	10.0	4.8	04/09/18 12:50	
Acrylonitrile	ug/L	<4.9	10.0	4.9	04/09/18 12:50	
Benzene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Bromobenzene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
Bromochloromethane	ug/L	<0.38	1.0	0.38	04/09/18 12:50	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
Bromoform	ug/L	<1.0	4.0	1.0	04/09/18 12:50	
Bromomethane	ug/L	<1.5	4.0	1.5	04/09/18 12:50	
Carbon disulfide	ug/L	<0.37	1.0	0.37	04/09/18 12:50	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	04/09/18 12:50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

METHOD BLANK: 2884933 Matrix: Water
Associated Lab Samples: 10426001001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Chloroethane	ug/L	<0.44	1.0	0.44	04/09/18 12:50	
Chloroform	ug/L	<0.46	1.0	0.46	04/09/18 12:50	
Chloromethane	ug/L	<1.1	4.0	1.1	04/09/18 12:50	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	04/09/18 12:50	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	04/09/18 12:50	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	04/09/18 12:50	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	04/09/18 12:50	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	04/09/18 12:50	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	04/09/18 12:50	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	04/09/18 12:50	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
m&p-Xylene	ug/L	<0.24	1.0	0.24	04/09/18 12:50	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Methylene Chloride	ug/L	<1.2	4.0	1.2	04/09/18 12:50	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
Naphthalene	ug/L	<0.42	1.0	0.42	04/09/18 12:50	
o-Xylene	ug/L	<0.11	0.50	0.11	04/09/18 12:50	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
Styrene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	04/09/18 12:50	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	04/09/18 12:50	
Toluene	ug/L	<0.17	0.50	0.17	04/09/18 12:50	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	04/09/18 12:50	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	04/09/18 12:50	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	04/09/18 12:50	
Trichloroethene	ug/L	<0.18	0.40	0.18	04/09/18 12:50	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Vinyl acetate	ug/L	<1.5	10.0	1.5	04/09/18 12:50	
Vinyl chloride	ug/L	<0.096	0.20	0.096	04/09/18 12:50	
Xylene (Total)	ug/L	<0.24	1.5	0.24	04/09/18 12:50	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		04/09/18 12:50	
4-Bromofluorobenzene (S)	%.	99	75-125		04/09/18 12:50	
Toluene-d8 (S)	%.	98	75-125		04/09/18 12:50	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

LABORATORY CONTROL SAMPLE: 2884934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	21.0	105	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	93	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.4	107	72-125	
1,1-Dichloroethane	ug/L	20	20.0	100	75-125	
1,1-Dichloroethene	ug/L	20	20.5	102	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-130	
1,2,3-Trichloropropane	ug/L	20	18.5	93	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	42.3	85	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.5	97	75-125	
1,2-Dichlorobenzene	ug/L	20	19.4	97	75-125	
1,2-Dichloroethane	ug/L	20	19.1	95	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.0	100	75-125	
1,2-Dichloropropane	ug/L	20	20.5	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.1	101	75-125	
1,3-Dichlorobenzene	ug/L	20	19.3	96	75-125	
1,3-Dichloropropane	ug/L	20	20.1	100	75-125	
1,4-Dichlorobenzene	ug/L	20	19.1	96	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	362	90	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.5	107	64-130	
2,2-Dichloropropane	ug/L	20	20.6	103	68-129	
2-Butanone (MEK)	ug/L	100	92.8	93	65-126	
2-Chlorotoluene	ug/L	20	19.3	97	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	20.0	100	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	75-131	
Acetone	ug/L	100	104	104	68-150	
Acrolein	ug/L	200	205	102	63-149	
Acrylonitrile	ug/L	200	204	102	75-125	
Benzene	ug/L	20	20.0	100	75-125	
Bromobenzene	ug/L	20	19.5	98	75-125	
Bromochloromethane	ug/L	20	20.9	104	75-125	
Bromodichloromethane	ug/L	20	20.2	101	75-125	
Bromoform	ug/L	20	19.2	96	70-125	
Bromomethane	ug/L	20	22.1	111	30-145	
Carbon disulfide	ug/L	20	18.3	91	67-125	
Carbon tetrachloride	ug/L	20	20.7	103	75-125	
Chlorobenzene	ug/L	20	20.1	101	75-125	
Chloroethane	ug/L	20	21.2	106	73-131	
Chloroform	ug/L	20	19.0	95	75-125	
Chloromethane	ug/L	20	21.2	106	52-132	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.0	95	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

LABORATORY CONTROL SAMPLE: 2884934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.6	98	75-125	
Dibromomethane	ug/L	20	20.1	101	75-125	
Dichlorodifluoromethane	ug/L	20	19.6	98	64-127	
Dichlorofluoromethane	ug/L	20	20.5	102	75-125	
Diisopropyl ether	ug/L	20	20.2	101	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	20.6	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.3	97	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	42.2	105	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	19.4	97	72-125	
n-Butylbenzene	ug/L	20	19.9	100	75-125	
n-Propylbenzene	ug/L	20	20.0	100	75-125	
Naphthalene	ug/L	20	18.7	93	61-136	
o-Xylene	ug/L	20	20.3	102	75-125	
p-Isopropyltoluene	ug/L	20	19.9	100	75-125	
sec-Butylbenzene	ug/L	20	20.2	101	75-125	
Styrene	ug/L	20	20.7	104	75-125	
tert-Amylmethyl ether	ug/L	20	19.8	99	75-125	
tert-Butyl Alcohol	ug/L	200	195	97	75-125	
tert-Butylbenzene	ug/L	20	19.4	97	75-125	
Tetrachloroethene	ug/L	20	20.5	103	75-125	
Tetrahydrofuran	ug/L	200	208	104	64-150	
Toluene	ug/L	20	19.8	99	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.4	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.1	96	57-126	
Trichloroethene	ug/L	20	20.2	101	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	18.7	93	72-129	
Vinyl chloride	ug/L	20	19.7	98	71-130	
Xylene (Total)	ug/L	60	62.5	104	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.8	19.3	99	97	75-125	2	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.7	20.8	114	104	75-129	9	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.5	18.6	102	93	75-125	10	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	21.6	19.8	108	99	75-125	8	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	23.5	21.5	117	107	75-136	9	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.5	19.6	106	97	75-125	9	30	
1,1-Dichloroethene	ug/L	ND	20	20	22.7	20.5	113	102	75-127	10	30	
1,1-Dichloropropene	ug/L	ND	20	20	22.3	20.3	111	101	75-129	10	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.0	19.2	110	96	72-137	13	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.3	17.8	101	89	75-125	13	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.1	19.0	105	95	69-131	11	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.0	18.8	105	94	71-125	11	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	46.6	41.7	93	83	61-127	11	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.3	19.0	101	95	75-125	6	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.2	18.9	106	95	75-125	11	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.3	17.5	97	88	69-125	10	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	43.3	39.6	108	98	75-125	9	30	
1,2-Dichloropropane	ug/L	ND	20	20	20.8	19.4	104	97	75-125	7	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.8	19.9	109	99	75-125	9	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.7	18.8	104	94	75-125	10	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.6	19.5	103	97	75-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.5	18.7	103	93	74-125	9	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	391	378	98	94	67-128	3	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	25.0	22.2	125	111	65-150	12	30	
2,2-Dichloropropane	ug/L	ND	20	20	23.0	20.7	115	103	65-136	11	30	
2-Butanone (MEK)	ug/L	ND	100	100	94.3	85.3	94	85	59-125	10	30	
2-Chlorotoluene	ug/L	ND	20	20	20.8	18.9	104	95	73-126	9	30	
2-Hexanone	ug/L	ND	100	100	105	98.3	105	98	68-138	6	30	
4-Chlorotoluene	ug/L	ND	20	20	21.5	19.3	108	97	75-125	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	106	97.6	106	98	73-125	8	30	
Acetone	ug/L	ND	100	100	165	154	165	154	75-150	7	30	M1
Acrolein	ug/L	ND	200	200	214	197	107	99	53-150	8	30	
Acrylonitrile	ug/L	ND	200	200	208	190	104	95	69-127	9	30	
Benzene	ug/L	ND	20	20	21.1	19.4	106	97	74-125	8	30	
Bromobenzene	ug/L	ND	20	20	21.1	19.1	106	95	75-125	10	30	
Bromochloromethane	ug/L	ND	20	20	21.5	19.4	107	97	75-125	10	30	
Bromodichloromethane	ug/L	ND	20	20	20.8	19.3	104	96	75-125	8	30	
Bromoform	ug/L	ND	20	20	20.4	19.0	102	95	68-125	7	30	
Bromomethane	ug/L	ND	20	20	24.8	25.4	124	127	37-149	2	30	
Carbon disulfide	ug/L	ND	20	20	20.7	18.6	104	93	66-139	11	30	
Carbon tetrachloride	ug/L	ND	20	20	22.8	21.2	114	106	75-127	8	30	
Chlorobenzene	ug/L	ND	20	20	20.7	19.6	104	98	75-125	6	30	
Chloroethane	ug/L	ND	20	20	22.8	21.7	114	109	73-134	5	30	
Chloroform	ug/L	ND	20	20	20.0	18.2	100	91	71-125	9	30	
Chloromethane	ug/L	ND	20	20	22.7	22.8	114	114	58-133	0	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.5	19.8	106	98	75-125	8	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.1	17.6	96	88	71-125	9	30	
Dibromochloromethane	ug/L	ND	20	20	20.6	19.2	103	96	75-125	7	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	20	20	21.0	19.1	105	95	75-125	10	30	
Dichlorodifluoromethane	ug/L	ND	20	20	21.6	20.7	108	103	70-150	5	30	
Dichlorofluoromethane	ug/L	ND	20	20	21.8	20.6	109	103	75-126	5	30	
Diisopropyl ether	ug/L	ND	20	20	20.7	19.1	103	95	66-131	8	30	
Ethyl-tert-butyl ether	ug/L	ND	20	20	20.7	19.1	103	96	74-125	8	30	
Ethylbenzene	ug/L	ND	20	20	21.2	20.0	106	100	75-125	6	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	24.3	21.4	121	107	60-150	13	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.4	20.1	107	101	75-125	6	30	
m&p-Xylene	ug/L	ND	40	40	43.2	40.7	108	102	75-125	6	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.6	18.9	103	94	75-125	9	30	
Methylene Chloride	ug/L	ND	20	20	20.0	18.6	100	93	72-125	7	30	
n-Butylbenzene	ug/L	ND	20	20	22.7	20.4	113	102	73-140	10	30	
n-Propylbenzene	ug/L	ND	20	20	21.4	19.7	107	98	75-126	9	30	
Naphthalene	ug/L	ND	20	20	20.5	18.4	103	92	61-136	11	30	
o-Xylene	ug/L	ND	20	20	21.0	19.4	105	97	75-125	8	30	
p-Isopropyltoluene	ug/L	ND	20	20	22.3	19.9	112	100	73-133	11	30	
sec-Butylbenzene	ug/L	ND	20	20	22.4	20.1	112	101	75-132	11	30	
Styrene	ug/L	ND	20	20	21.4	20.2	107	101	71-125	6	30	
tert-Amylmethyl ether	ug/L	ND	20	20	20.4	18.8	102	94	71-125	8	30	
tert-Butyl Alcohol	ug/L	ND	200	200	205	190	102	95	72-130	8	30	
tert-Butylbenzene	ug/L	ND	20	20	21.3	19.1	107	95	75-126	11	30	
Tetrachloroethene	ug/L	ND	20	20	21.7	20.3	109	102	75-125	7	30	
Tetrahydrofuran	ug/L	ND	200	200	336	305	168	152	75-150	10	30	M1
Toluene	ug/L	ND	20	20	20.9	19.3	104	97	74-125	8	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.8	19.8	109	99	75-125	10	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.0	17.8	95	89	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	52.6	47.4	105	95	57-125	10	30	
Trichloroethene	ug/L	5.3	20	20	26.6	25.0	107	99	75-125	6	30	
Trichlorofluoromethane	ug/L	ND	20	20	22.9	21.7	115	109	75-135	5	30	
Vinyl acetate	ug/L	ND	20	20	20.4	18.7	102	93	57-136	9	30	
Vinyl chloride	ug/L	ND	20	20	21.8	20.7	109	104	74-141	5	30	
Xylene (Total)	ug/L	ND	60	60	64.2	60.0	107	100	75-125	7	30	
1,2-Dichloroethane-d4 (S)	%.						100	100	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						98	100	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426001

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426001

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426001001	**Lang-GW-040318**	EPA 8260B	531313		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 10426001

10426001

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	~~TOC 5310~~	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Lang-GW-040318	WT	G	2018 4/3	945	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / CH2M	4/3/18	1730	[signature] / Pace	4/4/18	950	3.0	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/3/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10426001

PM: JMG **Due Date: 04/18/18**

CLIENT: UPRR_CH2M

Optional: Proj. Due Date: Proj. Name:

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7222 2740 1312

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.8 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** RG 4/4/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

RG 4/4/18

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 9:20	Temp: ~~3.0~~	Corrected Temp: 3.0
Time: 10:32	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/04/18

Note: Whenever there is a discrepancy affecting North Carolina complianc[e samples, a copy of this f]orm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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April 16, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426003

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Alaska Certification UST-107
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426003001	**MW21D-GW-040318**	Water	04/03/18 11:40	04/04/18 09:50
10426003002	**Trip Blank**	Water	04/03/18 00:00	04/04/18 09:50

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426003001	**MW21D-GW-040318**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CRE	1	PASI-V
10426003002	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426003001	**MW21D-GW-040318**					
RSK 175	Methane	3.2J	ug/L	10.0	04/09/18 12:50	
EPA 6010D	Aluminum, Dissolved	10.0J	ug/L	200	04/12/18 13:11	
EPA 6010D	Barium, Dissolved	67.0	ug/L	10.0	04/12/18 13:11	
EPA 6010D	Calcium, Dissolved	21600	ug/L	500	04/12/18 13:11	
EPA 6010D	Iron, Dissolved	197	ug/L	50.0	04/12/18 13:11	
EPA 6010D	Lead, Dissolved	3.4J	ug/L	10.0	04/12/18 13:11	
EPA 6010D	Magnesium, Dissolved	19800	ug/L	500	04/12/18 13:11	
EPA 6010D	Manganese, Dissolved	80.8	ug/L	5.0	04/12/18 13:11	
EPA 6010D	Potassium, Dissolved	4370	ug/L	2500	04/12/18 13:11	
EPA 6010D	Sodium, Dissolved	21900	ug/L	1000	04/12/18 13:11	
EPA 6010D	Vanadium, Dissolved	0.70J	ug/L	15.0	04/12/18 13:11	
SM 2320B	Alkalinity, Total as CaCO3	174	mg/L	5.0	04/12/18 11:01	
SM 2540C	Total Dissolved Solids	212	mg/L	10.0	04/09/18 15:38	
EPA 300.0	Chloride	2.5	mg/L	1.2	04/04/18 21:40	B
EPA 300.0	Sulfate	7.2	mg/L	1.2	04/04/18 21:40	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426003

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 531313

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10426628001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2886008)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 2886009)
  - Acetone
  - Tetrahydrofuran

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 530597

B: Analyte was detected in the associated method blank.
- BLANK for HBN 530597 [WETA/346 (Lab ID: 2879790)
  - Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 530597

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10425972004,10425981001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2879794)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2879793)
  - Chloride
- MSD (Lab ID: 2879795)
  - Chloride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 530844

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2881471)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2881472)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426003

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10426003

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Sample: MW21D-GW-040318 **Lab ID: 10426003001** Collected: 04/03/18 11:40 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		04/09/18 12:50	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		04/09/18 12:50	74-85-1	
Methane	**3.2J**	ug/L	10.0	1.1	1		04/09/18 12:50	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**10.0J**	ug/L	200	8.6	1	04/12/18 10:13	04/12/18 13:11	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	04/12/18 10:13	04/12/18 13:11	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	04/12/18 10:13	04/12/18 13:11	7440-38-2	
Barium, Dissolved	**67.0**	ug/L	10.0	0.22	1	04/12/18 10:13	04/12/18 13:11	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	04/12/18 10:13	04/12/18 13:11	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	04/12/18 10:13	04/12/18 13:11	7440-43-9	
Calcium, Dissolved	**21600**	ug/L	500	24.7	1	04/12/18 10:13	04/12/18 13:11	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	04/12/18 10:13	04/12/18 13:11	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	04/12/18 10:13	04/12/18 13:11	7440-48-4	
Copper, Dissolved	**<0.83**	ug/L	10.0	0.83	1	04/12/18 10:13	04/12/18 13:11	7440-50-8	
Iron, Dissolved	**197**	ug/L	50.0	16.7	1	04/12/18 10:13	04/12/18 13:11	7439-89-6	
Lead, Dissolved	**3.4J**	ug/L	10.0	3.0	1	04/12/18 10:13	04/12/18 13:11	7439-92-1	
Magnesium, Dissolved	**19800**	ug/L	500	2.6	1	04/12/18 10:13	04/12/18 13:11	7439-95-4	
Manganese, Dissolved	**80.8**	ug/L	5.0	0.38	1	04/12/18 10:13	04/12/18 13:11	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	04/12/18 10:13	04/12/18 13:11	7440-02-0	
Potassium, Dissolved	**4370**	ug/L	2500	126	1	04/12/18 10:13	04/12/18 13:11	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	04/12/18 10:13	04/12/18 13:11	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	04/12/18 10:13	04/12/18 13:11	7440-22-4	
Sodium, Dissolved	**21900**	ug/L	1000	44.6	1	04/12/18 10:13	04/12/18 13:11	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	04/12/18 10:13	04/12/18 13:11	7440-28-0	
Vanadium, Dissolved	**0.70J**	ug/L	15.0	0.42	1	04/12/18 10:13	04/12/18 13:11	7440-62-2	
Zinc, Dissolved	**<1.8**	ug/L	20.0	1.8	1	04/12/18 10:13	04/12/18 13:11	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	04/12/18 09:05	04/12/18 14:29	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		04/09/18 17:58	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		04/09/18 17:58	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		04/09/18 17:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		04/09/18 17:58	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:58	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		04/09/18 17:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		04/09/18 17:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	10.0	1.0	1		04/09/18 17:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		04/09/18 17:58	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Sample: MW21D-GW-040318 **Lab ID: 10426003001** Collected: 04/03/18 11:40 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 17:58	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		04/09/18 17:58	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		04/09/18 17:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 17:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:58	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		04/09/18 17:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		04/09/18 17:58	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		04/09/18 17:58	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		04/09/18 17:58	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		04/09/18 17:58	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:58	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		04/09/18 17:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		04/09/18 17:58	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		04/09/18 17:58	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		04/09/18 17:58	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		04/09/18 17:58	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:58	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 17:58	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:58	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		04/09/18 17:58	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		04/09/18 17:58	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		04/09/18 17:58	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:58	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		04/09/18 17:58	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		04/09/18 17:58	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		04/09/18 17:58	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		04/09/18 17:58	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		04/09/18 17:58	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		04/09/18 17:58	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 17:58	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		04/09/18 17:58	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		04/09/18 17:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		04/09/18 17:58	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		04/09/18 17:58	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 17:58	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		04/09/18 17:58	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Sample: MW21D-GW-040318 **Lab ID: 10426003001** Collected: 04/03/18 11:40 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.17**	ug/L	0.50	0.17	1		04/09/18 17:58	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		04/09/18 17:58	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		04/09/18 17:58	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		04/09/18 17:58	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		04/09/18 17:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 17:58	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		04/09/18 17:58	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		04/09/18 17:58	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 17:58	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:58	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		04/09/18 17:58	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 17:58	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:58	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		04/09/18 17:58	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		04/09/18 17:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		04/09/18 17:58	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 17:58	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		04/09/18 17:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		04/09/18 17:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		04/09/18 17:58	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		04/09/18 17:58	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		04/09/18 17:58	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**174**	mg/L	5.0	1.4	1		04/12/18 11:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**212**	mg/L	10.0	5.0	1		04/09/18 15:38		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		04/06/18 13:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.5**	mg/L	1.2	0.14	1		04/04/18 21:40	16887-00-6	B
Nitrate as N	**<0.0079**	mg/L	0.10	0.0079	1		04/04/18 21:40	14797-55-8	
Sulfate	**7.2**	mg/L	1.2	0.27	1		04/04/18 21:40	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.0075**	mg/L	0.020	0.0075	1		04/05/18 13:06		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	04/06/18 11:06	04/06/18 17:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10426003

Sample: MW21D-GW-040318 **Lab ID: 10426003001** Collected: 04/03/18 11:40 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**<0.20**	mg/L	1.0	0.20	1		04/07/18 00:57	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Sample: Trip Blank **Lab ID: 10426003002** Collected: 04/03/18 00:00 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		04/09/18 14:48	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 14:48	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		04/09/18 14:48	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		04/09/18 14:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		04/09/18 14:48	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 14:48	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 14:48	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		04/09/18 14:48	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 14:48	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		04/09/18 14:48	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	10.0	1.0	1		04/09/18 14:48	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		04/09/18 14:48	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 14:48	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/09/18 14:48	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		04/09/18 14:48	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		04/09/18 14:48	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		04/09/18 14:48	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 14:48	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		04/09/18 14:48	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		04/09/18 14:48	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		04/09/18 14:48	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		04/09/18 14:48	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		04/09/18 14:48	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 14:48	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		04/09/18 14:48	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		04/09/18 14:48	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		04/09/18 14:48	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		04/09/18 14:48	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		04/09/18 14:48	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 14:48	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 14:48	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		04/09/18 14:48	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		04/09/18 14:48	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		04/09/18 14:48	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		04/09/18 14:48	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		04/09/18 14:48	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		04/09/18 14:48	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		04/09/18 14:48	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		04/09/18 14:48	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		04/09/18 14:48	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10426003

Sample: Trip Blank **Lab ID: 10426003002** Collected: 04/03/18 00:00 Received: 04/04/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		04/09/18 14:48	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		04/09/18 14:48	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		04/09/18 14:48	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		04/09/18 14:48	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		04/09/18 14:48	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		04/09/18 14:48	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		04/09/18 14:48	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		04/09/18 14:48	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		04/09/18 14:48	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		04/09/18 14:48	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		04/09/18 14:48	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		04/09/18 14:48	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		04/09/18 14:48	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		04/09/18 14:48	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		04/09/18 14:48	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		04/09/18 14:48	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		04/09/18 14:48	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		04/09/18 14:48	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 14:48	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		04/09/18 14:48	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		04/09/18 14:48	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/09/18 14:48	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		04/09/18 14:48	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		04/09/18 14:48	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		04/09/18 14:48	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		04/09/18 14:48	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		04/09/18 14:48	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		04/09/18 14:48	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		04/09/18 14:48	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		04/09/18 14:48	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		04/09/18 14:48	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531284 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10426003001

METHOD BLANK: 2884856 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	04/09/18 08:36	
Ethene	ug/L	<0.68	10.0	0.68	04/09/18 08:36	
Methane	ug/L	5.8J	10.0	1.1	04/09/18 08:36	

LABORATORY CONTROL SAMPLE & LCSD: 2884857 2884858

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	106	112	93	98	85-115	5	20	
Ethene	ug/L	106	98.9	104	93	98	85-115	5	20	
Methane	ug/L	60.7	59.7	62.6	98	103	85-115	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884859 2884860

Parameter	Units	60267218003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	ND	114	114	106	21.6	92	18	30-150	132	20	R1
Ethene	ug/L	ND	106	106	103	22.8	96	21	30-150	127	20	R1
Methane	ug/L	11.0	60.7	60.7	69.0	22.6	96	19	30-150	101	20	R1

SAMPLE DUPLICATE: 2884861

Parameter	Units	7585147007 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	0.0046J mg/L	6.8J		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531957
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10426003001

METHOD BLANK: 2888874   Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	04/12/18 14:23	

LABORATORY CONTROL SAMPLE: 2888875

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888876   2888877

Parameter	Units	10426925002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.5	5.5	110	110	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531945 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10426003001

METHOD BLANK: 2888827 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	04/12/18 12:52	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	04/12/18 12:52	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	04/12/18 12:52	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	04/12/18 12:52	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	04/12/18 12:52	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	04/12/18 12:52	
Calcium, Dissolved	ug/L	<24.7	500	24.7	04/12/18 12:52	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	04/12/18 12:52	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	04/12/18 12:52	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	04/12/18 12:52	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	04/12/18 12:52	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	04/12/18 12:52	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	04/12/18 12:52	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	04/12/18 12:52	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	04/12/18 12:52	
Potassium, Dissolved	ug/L	<126	2500	126	04/12/18 12:52	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	04/12/18 12:52	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	04/12/18 12:52	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	04/12/18 12:52	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	04/12/18 12:52	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	04/12/18 12:52	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	04/12/18 12:52	

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	108	80-120	
Antimony, Dissolved	ug/L	1000	1030	103	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1040	104	80-120	
Beryllium, Dissolved	ug/L	1000	1040	104	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	1020	102	80-120	
Iron, Dissolved	ug/L	20000	20600	103	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Magnesium, Dissolved	ug/L	20000	20400	102	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20500	103	80-120	
Selenium, Dissolved	ug/L	1000	1090	109	80-120	
Silver, Dissolved	ug/L	500	500	100	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	992	99	80-120	
Zinc, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888829 2888830

Parameter	Units	10426000001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	9.6J	20000	20000	21700	21800	109	109	75-125	0	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1030	1040	103	104	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	103	104	75-125	0	20	
Barium, Dissolved	ug/L	19.1	1000	1000	1050	1060	103	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	0	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	0	20	
Calcium, Dissolved	ug/L	45400	20000	20000	64400	64900	95	97	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	1010	1010	101	101	75-125	0	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	1000	1000	100	100	75-125	0	20	
Copper, Dissolved	ug/L	6.8J	1000	1000	1030	1040	103	103	75-125	0	20	
Iron, Dissolved	ug/L	257	20000	20000	20600	20700	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1030	1030	102	103	75-125	0	20	
Magnesium, Dissolved	ug/L	13200	20000	20000	33600	33800	102	103	75-125	1	20	
Manganese, Dissolved	ug/L	12.7	1000	1000	1040	1040	103	103	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	998	999	100	100	75-125	0	20	
Potassium, Dissolved	ug/L	1280J	20000	20000	22500	22700	106	107	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1090	1080	109	108	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	503	505	101	101	75-125	0	20	
Sodium, Dissolved	ug/L	17900	20000	20000	37700	38100	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	1000	1010	100	101	75-125	0	20	
Vanadium, Dissolved	ug/L	5.5J	1000	1000	996	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	73.4	1000	1000	1000	1000	93	93	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531313 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10426003001, 10426003002

METHOD BLANK: 2884933 | Matrix: Water
Associated Lab Samples: 10426003001, 10426003002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	04/09/18 12:50	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	04/09/18 12:50	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	04/09/18 12:50	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	04/09/18 12:50	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	04/09/18 12:50	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	04/09/18 12:50	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	10.0	1.0	04/09/18 12:50	MN
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	04/09/18 12:50	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	04/09/18 12:50	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	04/09/18 12:50	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	04/09/18 12:50	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	04/09/18 12:50	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	04/09/18 12:50	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	04/09/18 12:50	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	04/09/18 12:50	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	04/09/18 12:50	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	04/09/18 12:50	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
2-Hexanone	ug/L	<2.5	5.0	2.5	04/09/18 12:50	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	04/09/18 12:50	
Acetone	ug/L	<8.8	20.0	8.8	04/09/18 12:50	
Acrolein	ug/L	<4.8	10.0	4.8	04/09/18 12:50	
Acrylonitrile	ug/L	<4.9	10.0	4.9	04/09/18 12:50	
Benzene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Bromobenzene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
Bromochloromethane	ug/L	<0.38	1.0	0.38	04/09/18 12:50	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
Bromoform	ug/L	<1.0	4.0	1.0	04/09/18 12:50	
Bromomethane	ug/L	<1.5	4.0	1.5	04/09/18 12:50	
Carbon disulfide	ug/L	<0.37	1.0	0.37	04/09/18 12:50	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	04/09/18 12:50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

METHOD BLANK: 2884933 Matrix: Water
Associated Lab Samples: 10426003001, 10426003002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Chloroethane	ug/L	<0.44	1.0	0.44	04/09/18 12:50	
Chloroform	ug/L	<0.46	1.0	0.46	04/09/18 12:50	
Chloromethane	ug/L	<1.1	4.0	1.1	04/09/18 12:50	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	04/09/18 12:50	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	04/09/18 12:50	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	04/09/18 12:50	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	04/09/18 12:50	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	04/09/18 12:50	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	04/09/18 12:50	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	04/09/18 12:50	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	04/09/18 12:50	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
m&p-Xylene	ug/L	<0.24	1.0	0.24	04/09/18 12:50	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
Methylene Chloride	ug/L	<1.2	4.0	1.2	04/09/18 12:50	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
Naphthalene	ug/L	<0.42	1.0	0.42	04/09/18 12:50	
o-Xylene	ug/L	<0.11	0.50	0.11	04/09/18 12:50	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
Styrene	ug/L	<0.14	0.50	0.14	04/09/18 12:50	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	04/09/18 12:50	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	04/09/18 12:50	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/09/18 12:50	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	04/09/18 12:50	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	04/09/18 12:50	
Toluene	ug/L	<0.17	0.50	0.17	04/09/18 12:50	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	04/09/18 12:50	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	04/09/18 12:50	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	04/09/18 12:50	
Trichloroethene	ug/L	<0.18	0.40	0.18	04/09/18 12:50	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	04/09/18 12:50	
Vinyl acetate	ug/L	<1.5	10.0	1.5	04/09/18 12:50	
Vinyl chloride	ug/L	<0.096	0.20	0.096	04/09/18 12:50	
Xylene (Total)	ug/L	<0.24	1.5	0.24	04/09/18 12:50	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		04/09/18 12:50	
4-Bromofluorobenzene (S)	%.	99	75-125		04/09/18 12:50	
Toluene-d8 (S)	%.	98	75-125		04/09/18 12:50	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

LABORATORY CONTROL SAMPLE: 2884934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	21.0	105	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	93	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.4	107	72-125	
1,1-Dichloroethane	ug/L	20	20.0	100	75-125	
1,1-Dichloroethene	ug/L	20	20.5	102	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-130	
1,2,3-Trichloropropane	ug/L	20	18.5	93	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	42.3	85	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.5	97	75-125	
1,2-Dichlorobenzene	ug/L	20	19.4	97	75-125	
1,2-Dichloroethane	ug/L	20	19.1	95	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.0	100	75-125	
1,2-Dichloropropane	ug/L	20	20.5	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.1	101	75-125	
1,3-Dichlorobenzene	ug/L	20	19.3	96	75-125	
1,3-Dichloropropane	ug/L	20	20.1	100	75-125	
1,4-Dichlorobenzene	ug/L	20	19.1	96	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	362	90	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.5	107	64-130	
2,2-Dichloropropane	ug/L	20	20.6	103	68-129	
2-Butanone (MEK)	ug/L	100	92.8	93	65-126	
2-Chlorotoluene	ug/L	20	19.3	97	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	20.0	100	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	75-131	
Acetone	ug/L	100	104	104	68-150	
Acrolein	ug/L	200	205	102	63-149	
Acrylonitrile	ug/L	200	204	102	75-125	
Benzene	ug/L	20	20.0	100	75-125	
Bromobenzene	ug/L	20	19.5	98	75-125	
Bromochloromethane	ug/L	20	20.9	104	75-125	
Bromodichloromethane	ug/L	20	20.2	101	75-125	
Bromoform	ug/L	20	19.2	96	70-125	
Bromomethane	ug/L	20	22.1	111	30-145	
Carbon disulfide	ug/L	20	18.3	91	67-125	
Carbon tetrachloride	ug/L	20	20.7	103	75-125	
Chlorobenzene	ug/L	20	20.1	101	75-125	
Chloroethane	ug/L	20	21.2	106	73-131	
Chloroform	ug/L	20	19.0	95	75-125	
Chloromethane	ug/L	20	21.2	106	52-132	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.0	95	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

LABORATORY CONTROL SAMPLE: 2884934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.6	98	75-125	
Dibromomethane	ug/L	20	20.1	101	75-125	
Dichlorodifluoromethane	ug/L	20	19.6	98	64-127	
Dichlorofluoromethane	ug/L	20	20.5	102	75-125	
Diisopropyl ether	ug/L	20	20.2	101	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	20.6	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.3	97	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	42.2	105	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	19.4	97	72-125	
n-Butylbenzene	ug/L	20	19.9	100	75-125	
n-Propylbenzene	ug/L	20	20.0	100	75-125	
Naphthalene	ug/L	20	18.7	93	61-136	
o-Xylene	ug/L	20	20.3	102	75-125	
p-Isopropyltoluene	ug/L	20	19.9	100	75-125	
sec-Butylbenzene	ug/L	20	20.2	101	75-125	
Styrene	ug/L	20	20.7	104	75-125	
tert-Amylmethyl ether	ug/L	20	19.8	99	75-125	
tert-Butyl Alcohol	ug/L	200	195	97	75-125	
tert-Butylbenzene	ug/L	20	19.4	97	75-125	
Tetrachloroethene	ug/L	20	20.5	103	75-125	
Tetrahydrofuran	ug/L	200	208	104	64-150	
Toluene	ug/L	20	19.8	99	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.4	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.1	96	57-126	
Trichloroethene	ug/L	20	20.2	101	75-125	
Trichlorofluoromethane	ug/L	20	21.2	106	74-126	
Vinyl acetate	ug/L	20	18.7	93	72-129	
Vinyl chloride	ug/L	20	19.7	98	71-130	
Xylene (Total)	ug/L	60	62.5	104	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.8	19.3	99	97	75-125	2	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.7	20.8	114	104	75-129	9	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.5	18.6	102	93	75-125	10	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	21.6	19.8	108	99	75-125	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	23.5	21.5	117	107	75-136	9	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.5	19.6	106	97	75-125	9	30	
1,1-Dichloroethene	ug/L	ND	20	20	22.7	20.5	113	102	75-127	10	30	
1,1-Dichloropropene	ug/L	ND	20	20	22.3	20.3	111	101	75-129	10	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.0	19.2	110	96	72-137	13	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.3	17.8	101	89	75-125	13	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.1	19.0	105	95	69-131	11	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.0	18.8	105	94	71-125	11	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	46.6	41.7	93	83	61-127	11	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.3	19.0	101	95	75-125	6	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.2	18.9	106	95	75-125	11	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.3	17.5	97	88	69-125	10	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	43.3	39.6	108	98	75-125	9	30	
1,2-Dichloropropane	ug/L	ND	20	20	20.8	19.4	104	97	75-125	7	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.8	19.9	109	99	75-125	9	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.7	18.8	104	94	75-125	10	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.6	19.5	103	97	75-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.5	18.7	103	93	74-125	9	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	391	378	98	94	67-128	3	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	25.0	22.2	125	111	65-150	12	30	
2,2-Dichloropropane	ug/L	ND	20	20	23.0	20.7	115	103	65-136	11	30	
2-Butanone (MEK)	ug/L	ND	100	100	94.3	85.3	94	85	59-125	10	30	
2-Chlorotoluene	ug/L	ND	20	20	20.8	18.9	104	95	73-126	9	30	
2-Hexanone	ug/L	ND	100	100	105	98.3	105	98	68-138	6	30	
4-Chlorotoluene	ug/L	ND	20	20	21.5	19.3	108	97	75-125	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	106	97.6	106	98	73-125	8	30	
Acetone	ug/L	ND	100	100	165	154	165	154	75-150	7	30	M1
Acrolein	ug/L	ND	200	200	214	197	107	99	53-150	8	30	
Acrylonitrile	ug/L	ND	200	200	208	190	104	95	69-127	9	30	
Benzene	ug/L	ND	20	20	21.1	19.4	106	97	74-125	8	30	
Bromobenzene	ug/L	ND	20	20	21.1	19.1	106	95	75-125	10	30	
Bromochloromethane	ug/L	ND	20	20	21.5	19.4	107	97	75-125	10	30	
Bromodichloromethane	ug/L	ND	20	20	20.8	19.3	104	96	75-125	8	30	
Bromoform	ug/L	ND	20	20	20.4	19.0	102	95	68-125	7	30	
Bromomethane	ug/L	ND	20	20	24.8	25.4	124	127	37-149	2	30	
Carbon disulfide	ug/L	ND	20	20	20.7	18.6	104	93	66-139	11	30	
Carbon tetrachloride	ug/L	ND	20	20	22.8	21.2	114	106	75-127	8	30	
Chlorobenzene	ug/L	ND	20	20	20.7	19.6	104	98	75-125	6	30	
Chloroethane	ug/L	ND	20	20	22.8	21.7	114	109	73-134	5	30	
Chloroform	ug/L	ND	20	20	20.0	18.2	100	91	71-125	9	30	
Chloromethane	ug/L	ND	20	20	22.7	22.8	114	114	58-133	0	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.5	19.8	106	98	75-125	8	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.1	17.6	96	88	71-125	9	30	
Dibromochloromethane	ug/L	ND	20	20	20.6	19.2	103	96	75-125	7	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886008 2886009

Parameter	Units	10426628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	20	20	21.0	19.1	105	95	75-125	10	30	
Dichlorodifluoromethane	ug/L	ND	20	20	21.6	20.7	108	103	70-150	5	30	
Dichlorofluoromethane	ug/L	ND	20	20	21.8	20.6	109	103	75-126	5	30	
Diisopropyl ether	ug/L	ND	20	20	20.7	19.1	103	95	66-131	8	30	
Ethyl-tert-butyl ether	ug/L	ND	20	20	20.7	19.1	103	96	74-125	8	30	
Ethylbenzene	ug/L	ND	20	20	21.2	20.0	106	100	75-125	6	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	24.3	21.4	121	107	60-150	13	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.4	20.1	107	101	75-125	6	30	
m&p-Xylene	ug/L	ND	40	40	43.2	40.7	108	102	75-125	6	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.6	18.9	103	94	75-125	9	30	
Methylene Chloride	ug/L	ND	20	20	20.0	18.6	100	93	72-125	7	30	
n-Butylbenzene	ug/L	ND	20	20	22.7	20.4	113	102	73-140	10	30	
n-Propylbenzene	ug/L	ND	20	20	21.4	19.7	107	98	75-126	9	30	
Naphthalene	ug/L	ND	20	20	20.5	18.4	103	92	61-136	11	30	
o-Xylene	ug/L	ND	20	20	21.0	19.4	105	97	75-125	8	30	
p-Isopropyltoluene	ug/L	ND	20	20	22.3	19.9	112	100	73-133	11	30	
sec-Butylbenzene	ug/L	ND	20	20	22.4	20.1	112	101	75-132	11	30	
Styrene	ug/L	ND	20	20	21.4	20.2	107	101	71-125	6	30	
tert-Amylmethyl ether	ug/L	ND	20	20	20.4	18.8	102	94	71-125	8	30	
tert-Butyl Alcohol	ug/L	ND	200	200	205	190	102	95	72-130	8	30	
tert-Butylbenzene	ug/L	ND	20	20	21.3	19.1	107	95	75-126	11	30	
Tetrachloroethene	ug/L	ND	20	20	21.7	20.3	109	102	75-125	7	30	
Tetrahydrofuran	ug/L	ND	200	200	336	305	168	152	75-150	10	30	M1
Toluene	ug/L	ND	20	20	20.9	19.3	104	97	74-125	8	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.8	19.8	109	99	75-125	10	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.0	17.8	95	89	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	52.6	47.4	105	95	57-125	10	30	
Trichloroethene	ug/L	5.3	20	20	26.6	25.0	107	99	75-125	6	30	
Trichlorofluoromethane	ug/L	ND	20	20	22.9	21.7	115	109	75-135	5	30	
Vinyl acetate	ug/L	ND	20	20	20.4	18.7	102	93	57-136	9	30	
Vinyl chloride	ug/L	ND	20	20	21.8	20.7	109	104	74-141	5	30	
Xylene (Total)	ug/L	ND	60	60	64.2	60.0	107	100	75-125	7	30	
1,2-Dichloroethane-d4 (S)	%.						100	100	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						98	100	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531996 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10426003001

METHOD BLANK: 2888961 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	04/12/18 09:23	

LABORATORY CONTROL SAMPLE & LCSD: 2888962 | 2888963

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.2	42.1	103	105	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888964 | 2888965

Parameter	Units	10425877001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	90.8	40	40	134	129	108	96	80-120	4	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888966 | 2888967

Parameter	Units	10425877002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	92.0	40	40	134	135	104	108	80-120	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531352 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10426003001

METHOD BLANK: 2885067 Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	04/09/18 15:38	

LABORATORY CONTROL SAMPLE & LCSD: 2885068 2885069

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	982	966	98	97	80-120	2	10	

SAMPLE DUPLICATE: 2885070

Parameter	Units	10426291001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	890	980	10	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 106177
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10426003001

METHOD BLANK: 457643 Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	04/06/18 13:02	

LABORATORY CONTROL SAMPLE: 457644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	94	90-110	

MATRIX SPIKE SAMPLE: 457646

Parameter	Units	10426000001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.18	93	75-125	

SAMPLE DUPLICATE: 457645

Parameter	Units	10426000001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 530597 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10426003001

METHOD BLANK: 2879790 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31J	1.2	0.14	04/04/18 12:00	
Nitrate as N	mg/L	<0.0079	0.10	0.0079	04/04/18 12:00	
Sulfate	mg/L	<0.27	1.2	0.27	04/04/18 12:00	

LABORATORY CONTROL SAMPLE: 2879791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.7	93	90-110	
Nitrate as N	mg/L	1	0.97	97	90-110	
Sulfate	mg/L	12.5	11.8	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879792 2879793

Parameter	Units	10425972004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.7	12.5	12.5	15.1	14.7	91	88	90-110	2	20	M1
Nitrate as N	mg/L	0.20	1	1	1.2	1.2	98	95	90-110	2	20	
Sulfate	mg/L	3.3	12.5	12.5	15.1	14.7	95	92	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2879794 2879795

Parameter	Units	10425981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.1	12.5	12.5	18.6	18.7	84	85	90-110	1	20	M1
Nitrate as N	mg/L	0.29	1	1	1.3	1.3	96	97	90-110	1	20	
Sulfate	mg/L	58.5	12.5	12.5	62.0	62.0	28	28	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 530844 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10426003001

METHOD BLANK: 2881469 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	04/05/18 13:09	FS

LABORATORY CONTROL SAMPLE: 2881470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2881471 2881472

Parameter	Units	10425432006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	118	100	100	209	217	91	99	90-110	4	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2881473 2881474

Parameter	Units	10425612001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.95	0.96	95	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 531060
Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4
Analysis Description: 410.4 COD
Associated Lab Samples: 10426003001

METHOD BLANK: 2883440 Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	04/06/18 16:57	

LABORATORY CONTROL SAMPLE: 2883441

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2883442 2883443

Parameter	Units	10426013001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	250	250	256	259	98	100	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

QC Batch: 140134 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10426003001

METHOD BLANK: 554979 | Matrix: Water
Associated Lab Samples: 10426003001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	04/06/18 23:06	

LABORATORY CONTROL SAMPLE: 554980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 554981 554982

Parameter	Units	10425853001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.3	25.3	101	101	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10426003

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426003001	**MW21D-GW-040318**	RSK 175	531284		
10426003001	**MW21D-GW-040318**	EPA 3010	531945	EPA 6010D	532046
10426003001	**MW21D-GW-040318**	EPA 7470A	531957	EPA 7470A	532074
10426003001	**MW21D-GW-040318**	EPA 8260B	531313		
10426003002	**Trip Blank**	EPA 8260B	531313		
10426003001	**MW21D-GW-040318**	SM 2320B	531996		
10426003001	**MW21D-GW-040318**	SM 2540C	531352		
10426003001	**MW21D-GW-040318**	SM 4500-S-2 D	106177		
10426003001	**MW21D-GW-040318**	EPA 300.0	530597		
10426003001	**MW21D-GW-040318**	EPA 353.2	530844		
10426003001	**MW21D-GW-040318**	EPA 410.4	531060	EPA 410.4	531175
10426003001	**MW21D-GW-040318**	SM 5310C	140134		

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 10426003

10426003

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	***10 Day Standard***

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	MW21D-GW-040318	WT	G	4/3	1140	—	—	—	12	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X		48 hr hold	001
2	Trip Blank	↓	—	4/3	—	—	—	—	2				X				X												002
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / CH2M	~~4/4/18~~ 4/3/18	1730	[signature] / Pace	4/4/18	950	3.0	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/3/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10426003

PM: JMG **Due Date: 04/18/18**

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7222 2740 1312

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.8 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** RG 4/4/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample #
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. Only 2 trip blanks
Trip Blank Custody Seals Present?	☐ Yes	☒ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

RG 4/4/18

Comments/Resolution:

Temp Log: Temp must be maintained at ≤6° during login, record temp every 20 mins		
Opened Time: 10:20	Temp: ~~3.0~~ 2.8	Corrected Temp: 3.0
Time: 10:32	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/04/18

Note: Whenever there is a discrepancy affecting North Carolina complianc[e] [th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
MW21D-GW-040318	2	0	1	3

Chain of Custody

WO# : 2074007

2074007

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426003 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 4/4/2018 Results Requested By: 4/18/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other						Requested Analysis: 5636267 / 4500 Sulfide												LAB USE ONLY
1	MW21D-GW-040318	PS	4/3/2018 11:40	10426003001	Water	1						X												
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	4/04/18 1655		
2	Fed Ex	4-5-18 0830	millen / Pace	4-5-18 0830
3				

Comments

Cooler Temperature on Receipt 4.4 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upo P

WO#: 2074007

PM: CMM Due Date: 04/18/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/16/18 ~~ms~~

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8 500 plastic
Filtered vol. Rec. for Diss. tests	☐Yes ☐No ☑N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 _______ H2SO4 _______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: __________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426003 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 4/4/2018 Results Requested By: 4/18/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4						Requested Analysis: 5632354 / 5310 TOC												LAB USE ONLY
1	MW21D-GW-040318	PS	4/3/2018 11:40	10426003001	Water	2						X												
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Amy Hart Pace	4/4/18 1730	CB	4/4/18 1830	
2	CB	4/4/18 2300	B Mathews	4/5/18 0715	
3					

Cooler Temperature on Receipt 2.6 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace - Mpls.

Project #:

WO#: 12106736

PM: HRZ Due Date: 04/18/18

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.3 Cooler Temp Corrected °C: 2.6

Temp should be above freezing to 6°C Correction Factor: +0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Date and Initials of Person Examining Contents: 4/4/18 CJ3

Comments: BM 4/5/18

	Yes	No	N/A	Comments
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 17, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
1(612)607-6390
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain
Pace Project No.:	10426556

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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Minneapolis, MN 55414
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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426556001	**SV-112**	Air	04/03/18 08:24	04/09/18 09:30
10426556002	**SV-113**	Air	04/03/18 08:25	04/09/18 09:30
10426556003	**Unused Can #3428**	Air		04/09/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426556001	**SV-112**	TO-15	DR1, MJL	2	PASI-M
10426556002	**SV-113**	TO-15	DR1, MJL	2	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426556001	**SV-112**					
TO-15	Carbon tetrachloride	1.4	ug/m3	1.0	04/15/18 12:38	
TO-15	Chloroform	0.19J	ug/m3	0.36	04/16/18 16:50	
10426556002	**SV-113**					
TO-15	Carbon tetrachloride	503	ug/m3	29.7	04/16/18 17:26	
TO-15	Chloroform	34.2	ug/m3	0.77	04/15/18 13:17	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: UPRR_CH2M/Jacobs
Date: April 17, 2018

General Information:
2 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Sample: SV-112 **Lab ID: 10426556001** Collected: 04/03/18 08:24 Received: 04/09/18 09:30 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Carbon tetrachloride	**1.4**	ug/m3	1.0	0.51	1.61		04/15/18 12:38	56-23-5	
Chloroform	**0.19J**	ug/m3	0.36	0.17	0.72		04/16/18 16:50	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Sample: SV-113 **Lab ID: 10426556002** Collected: 04/03/18 08:25 Received: 04/09/18 09:30 Matrix: Air

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15								
Carbon tetrachloride	**503**	ug/m3	29.7	14.8	46.5		04/16/18 17:26	56-23-5	
Chloroform	**34.2**	ug/m3	0.77	0.36	1.55		04/15/18 13:17	67-66-3	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

QC Batch: 532392 | Analysis Method: TO-15
QC Batch Method: TO-15 | Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10426556001, 10426556002

METHOD BLANK: 2891551 | Matrix: Air
Associated Lab Samples: 10426556001, 10426556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/m3	<0.32	0.64	0.32	04/15/18 11:37	
Chloroform	ug/m3	<0.23	0.50	0.23	04/15/18 11:37	

LABORATORY CONTROL SAMPLE: 2891552

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	64	79.4	124	56-138	
Chloroform	ug/m3	49.6	59.2	119	66-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain
Pace Project No.: 10426556

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426556001	**SV-112**	TO-15	532392		
10426556002	**SV-113**	TO-15	532392		

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AIR: CHAIN-OF-CUSTODY /

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant

WO#: 10426556
10426556

31969

Page: 1 of 1

Section A Required Client Information:

Company:	CH2M
Address:	999 W. Riverside #500 Spokane, WA 99201
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostaphovicz
Copy To:	David Hodson, Steve Demus Lindsey Baumann
Purchase Order No.:	PEDD# 1497
Project Name:	Freeman WA-Grain
Project Number:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company Name:	UPRR
Address:	1400 W. 52nd Ave, Denver CO 80221
Pace Quote Reference:	Contract # 758938
Pace Project Manager/Sales Rep.	Jennifer Gross
Pace Profile #:	37080

Program: UST, Superfund, Emissions, Clean Air Act, Voluntary Clean Up, Dry Clean, RCRA, Other___

Location of Sampling by State: WA

Reporting Units: ug/m³ ✓ mg/m³___ PPBV ✓ PPMV___ Other___

Report Level II.___ III.___ IV.___ Other___

Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

Method: PM10, 3C - Fixed Gas (%), TO-3 BTEX, TO-3M (Methane), TO-14, TO-15 Full List VOCs SIM, TO-15 Short List BTEX, TO-15 Short List Chlorinated, TO-15 Short List (other)

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start DATE (2018)	TIME	Composite - End/Grab DATE	TIME	Canister Pressure (Initial Field - In Hg)	Canister Pressure (Final Field - In Hg)	Summa Can Number	Flow Control Number	PM10	3C	TO-3 BTEX	TO-3M	TO-14	TO-15 Full List VOCs SIM	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	SV-112	6LC	Ø	4/2	940	4/3	824	-22	-1.5	3333	0756						X				001
2	SV-113	↓	Ø	4/2	944	4/3	825	-27	-3	3362	1386						X				002
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / CH2M	4/5/18	1530	[signature] Pace	4/6/18	9:30

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
-	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY) 4/5/18

ORIGINAL

Pace Analytical	Document Name: **Air Sample Condition Upon Receipt**	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: **F-MN-A-106-rev.14**	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: CH2M

Project #: WO#: 10426556
PM: CB Due Date: 04/16/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7476 3006 2277

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): — **Corrected Temp (°C):** — **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** — **Date & Initials of Person Examining Contents:** RG 4/9/18

Type of ice Received ☐ Blue ☐ Wet ☒ None

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample ~~Labels Match~~ COC?	☒ Yes	☐ No	☐ N/A	12.

Samples Received: Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
SV-112			-5	5					
SV-113			-4	11					
unused	3428	0137	-4	—					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Chris Bremer **Date:** 4/9/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

April 16, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426984001	**Marlow-GW-041018**	Water	04/10/18 10:50	04/11/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426984001	**Marlow-GW-041018**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman

Pace Project No.: 10426984

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426984001	**Marlow-GW-041018**					
EPA 8260B	Carbon tetrachloride	112	ug/L	0.50	04/12/18 14:12	
EPA 8260B	Chloroform	7.7	ug/L	1.0	04/12/18 14:12	

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman
Pace Project No.:	10426984

Date: April 16, 2018

The trip blank received for this project is shared and reported on work order # 10426976.

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 531987

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2888939)
  - Bromomethane
- MS (Lab ID: 2889202)
  - Bromomethane
- MSD (Lab ID: 2889203)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 531987

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10427058001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2889202)
  - Acetone
  - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Sample: Marlow-GW-041018 **Lab ID: 10426984001** Collected: 04/10/18 10:50 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		04/12/18 14:12	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		04/12/18 14:12	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		04/12/18 14:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		04/12/18 14:12	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:12	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		04/12/18 14:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		04/12/18 14:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	10.0	1.0	1		04/12/18 14:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		04/12/18 14:12	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		04/12/18 14:12	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		04/12/18 14:12	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		04/12/18 14:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:12	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		04/12/18 14:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		04/12/18 14:12	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		04/12/18 14:12	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		04/12/18 14:12	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		04/12/18 14:12	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:12	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		04/12/18 14:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		04/12/18 14:12	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		04/12/18 14:12	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		04/12/18 14:12	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		04/12/18 14:12	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:12	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		04/12/18 14:12	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:12	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		04/12/18 14:12	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		04/12/18 14:12	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		04/12/18 14:12	75-15-0	
Carbon tetrachloride	**112**	ug/L	0.50	0.20	1		04/12/18 14:12	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		04/12/18 14:12	75-00-3	
Chloroform	**7.7**	ug/L	1.0	0.46	1		04/12/18 14:12	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		04/12/18 14:12	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		04/12/18 14:12	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Sample: Marlow-GW-041018 **Lab ID: 10426984001** Collected: 04/10/18 10:50 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		04/12/18 14:12	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		04/12/18 14:12	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		04/12/18 14:12	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		04/12/18 14:12	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		04/12/18 14:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		04/12/18 14:12	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		04/12/18 14:12	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:12	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		04/12/18 14:12	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		04/12/18 14:12	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		04/12/18 14:12	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		04/12/18 14:12	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		04/12/18 14:12	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		04/12/18 14:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:12	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		04/12/18 14:12	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		04/12/18 14:12	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:12	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:12	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		04/12/18 14:12	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:12	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:12	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:12	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		04/12/18 14:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:12	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		04/12/18 14:12	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		04/12/18 14:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		04/12/18 14:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		04/12/18 14:12	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		04/12/18 14:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		04/12/18 14:12	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

QC Batch: 531987 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10426984001

METHOD BLANK: 2888938 | Matrix: Water
Associated Lab Samples: 10426984001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	04/12/18 10:38	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	04/12/18 10:38	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	04/12/18 10:38	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	04/12/18 10:38	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	04/12/18 10:38	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	04/12/18 10:38	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	10.0	1.0	04/12/18 10:38	MN
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	04/12/18 10:38	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	04/12/18 10:38	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	04/12/18 10:38	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	04/12/18 10:38	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	04/12/18 10:38	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	04/12/18 10:38	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	04/12/18 10:38	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	04/12/18 10:38	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	04/12/18 10:38	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
2-Hexanone	ug/L	<2.5	5.0	2.5	04/12/18 10:38	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	04/12/18 10:38	
Acetone	ug/L	<8.8	20.0	8.8	04/12/18 10:38	
Acrolein	ug/L	<4.8	10.0	4.8	04/12/18 10:38	
Acrylonitrile	ug/L	<4.9	10.0	4.9	04/12/18 10:38	
Benzene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Bromobenzene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
Bromochloromethane	ug/L	<0.38	1.0	0.38	04/12/18 10:38	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
Bromoform	ug/L	<1.0	4.0	1.0	04/12/18 10:38	
Bromomethane	ug/L	<1.5	4.0	1.5	04/12/18 10:38	
Carbon disulfide	ug/L	<0.37	1.0	0.37	04/12/18 10:38	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	04/12/18 10:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

METHOD BLANK: 2888938 Matrix: Water
Associated Lab Samples: 10426984001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Chloroethane	ug/L	<0.44	1.0	0.44	04/12/18 10:38	
Chloroform	ug/L	<0.46	1.0	0.46	04/12/18 10:38	
Chloromethane	ug/L	<1.1	4.0	1.1	04/12/18 10:38	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	04/12/18 10:38	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	04/12/18 10:38	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	04/12/18 10:38	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	04/12/18 10:38	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	04/12/18 10:38	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	04/12/18 10:38	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	04/12/18 10:38	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
m&p-Xylene	ug/L	<0.24	1.0	0.24	04/12/18 10:38	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Methylene Chloride	ug/L	<1.2	4.0	1.2	04/12/18 10:38	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
Naphthalene	ug/L	<0.42	1.0	0.42	04/12/18 10:38	
o-Xylene	ug/L	<0.11	0.50	0.11	04/12/18 10:38	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
Styrene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	04/12/18 10:38	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	04/12/18 10:38	
Toluene	ug/L	<0.17	0.50	0.17	04/12/18 10:38	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	04/12/18 10:38	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	04/12/18 10:38	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	04/12/18 10:38	
Trichloroethene	ug/L	<0.18	0.40	0.18	04/12/18 10:38	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Vinyl acetate	ug/L	<1.5	10.0	1.5	04/12/18 10:38	
Vinyl chloride	ug/L	<0.096	0.20	0.096	04/12/18 10:38	
Xylene (Total)	ug/L	<0.24	1.5	0.24	04/12/18 10:38	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		04/12/18 10:38	
4-Bromofluorobenzene (S)	%.	98	75-125		04/12/18 10:38	
Toluene-d8 (S)	%.	98	75-125		04/12/18 10:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

LABORATORY CONTROL SAMPLE: 2888939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.0	100	75-125	
1,1,1-Trichloroethane	ug/L	20	21.2	106	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	75-125	
1,1,2-Trichloroethane	ug/L	20	20.7	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.5	107	72-125	
1,1-Dichloroethane	ug/L	20	20.1	100	75-125	
1,1-Dichloroethene	ug/L	20	20.4	102	73-125	
1,1-Dichloropropene	ug/L	20	20.2	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.1	100	72-130	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.8	99	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	45.6	91	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.1	100	75-125	
1,2-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,2-Dichloroethane	ug/L	20	19.1	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.9	100	75-125	
1,2-Dichloropropane	ug/L	20	20.5	102	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.5	102	75-125	
1,3-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,3-Dichloropropane	ug/L	20	20.2	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	367	92	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.8	109	64-130	
2,2-Dichloropropane	ug/L	20	20.8	104	68-129	
2-Butanone (MEK)	ug/L	100	98.8	99	65-126	
2-Chlorotoluene	ug/L	20	19.5	97	75-125	
2-Hexanone	ug/L	100	110	110	75-134	
4-Chlorotoluene	ug/L	20	20.2	101	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	220	110	75-125	
Benzene	ug/L	20	19.9	99	75-125	
Bromobenzene	ug/L	20	19.9	99	75-125	
Bromochloromethane	ug/L	20	21.2	106	75-125	
Bromodichloromethane	ug/L	20	20.7	104	75-125	
Bromoform	ug/L	20	20.7	103	70-125	
Bromomethane	ug/L	20	28.5	142	30-145	CH
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	21.1	106	75-125	
Chlorobenzene	ug/L	20	20.4	102	75-125	
Chloroethane	ug/L	20	23.1	116	73-131	
Chloroform	ug/L	20	19.5	98	75-125	
Chloromethane	ug/L	20	25.0	125	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

LABORATORY CONTROL SAMPLE: 2888939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.3	101	75-125	
Dibromomethane	ug/L	20	20.1	100	75-125	
Dichlorodifluoromethane	ug/L	20	22.9	114	64-127	
Dichlorofluoromethane	ug/L	20	21.6	108	75-125	
Diisopropyl ether	ug/L	20	20.4	102	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.5	103	75-125	
Ethylbenzene	ug/L	20	20.7	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.8	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.9	104	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Methylene Chloride	ug/L	20	19.1	95	72-125	
n-Butylbenzene	ug/L	20	20.5	102	75-125	
n-Propylbenzene	ug/L	20	20.4	102	75-125	
Naphthalene	ug/L	20	19.5	97	61-136	
o-Xylene	ug/L	20	20.3	102	75-125	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	20.8	104	75-125	
Styrene	ug/L	20	21.0	105	75-125	
tert-Amylmethyl ether	ug/L	20	20.2	101	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-125	
tert-Butylbenzene	ug/L	20	19.7	98	75-125	
Tetrachloroethene	ug/L	20	20.2	101	75-125	
Tetrahydrofuran	ug/L	200	211	106	64-150	
Toluene	ug/L	20	20.2	101	75-125	
trans-1,2-Dichloroethene	ug/L	20	19.8	99	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.7	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	51.4	103	57-126	
Trichloroethene	ug/L	20	20.0	100	75-125	
Trichlorofluoromethane	ug/L	20	22.7	113	74-126	
Vinyl acetate	ug/L	20	19.5	97	72-129	
Vinyl chloride	ug/L	20	21.6	108	71-130	
Xylene (Total)	ug/L	60	62.7	104	75-125	
1,2-Dichloroethane-d4 (S)	%.			101	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889202 2889203

Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	19.1	18.9	96	94	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	21.3	21.7	107	108	75-129	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.4	19.8	97	99	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	19.9	20.1	100	101	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2889202			2889203							
Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	21.8	21.7	109	108	75-136	0	30	
1,1-Dichloroethane	ug/L	2.1	20	20	21.8	21.9	98	99	75-125	0	30	
1,1-Dichloroethene	ug/L	0.27J	20	20	21.5	21.0	106	103	75-127	3	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	20.1	20.2	101	101	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	20.5	20.0	102	100	72-137	3	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	19.1	18.5	96	92	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	19.5	18.8	97	94	69-131	4	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	19.0	19.3	95	97	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	42.9	43.3	86	87	61-127	1	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.0	19.2	95	96	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	19.0	19.4	95	97	75-125	2	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	18.1	18.2	91	91	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	3.8	40	40	43.0	43.2	98	98	75-125	0	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	19.4	19.3	97	96	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	20.0	20.3	100	101	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	19.4	19.1	97	95	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	18.9	19.1	94	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	346	349	86	87	67-128	1	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	23.3	22.3	116	112	65-150	4	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	20.9	20.9	104	105	65-136	0	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.2	91.5	91	92	59-125	0	30	
2-Chlorotoluene	ug/L	<0.20	20	20	18.4	18.7	92	94	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	102	100	102	100	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.6	20.0	98	100	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	99.9	99.9	100	100	73-125	0	30	
Acetone	ug/L	<8.8	100	100	151	150	151	150	75-150	1	30	M1
Acrolein	ug/L	<4.8	200	200	217	220	108	110	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	201	99	101	69-127	2	30	
Benzene	ug/L	<0.13	20	20	19.5	19.6	98	98	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	19.4	19.3	97	96	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	20.0	20.2	100	101	75-125	1	30	
Bromodichloromethane	ug/L	<0.20	20	20	19.6	19.5	98	98	75-125	1	30	
Bromoform	ug/L	<1.0	20	20	19.5	19.5	97	97	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	28.4	29.8	142	149	37-149	5	30	CH
Carbon disulfide	ug/L	<0.37	20	20	17.5	17.2	87	86	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	21.2	21.3	106	106	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	19.4	19.6	97	98	75-125	1	30	
Chloroethane	ug/L	<0.44	20	20	23.1	23.3	115	117	73-134	1	30	
Chloroform	ug/L	<0.46	20	20	18.6	18.6	93	93	71-125	0	30	
Chloromethane	ug/L	<1.1	20	20	25.5	24.3	127	122	58-133	5	30	
cis-1,2-Dichloroethene	ug/L	3.6	20	20	23.0	23.2	97	98	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	17.8	17.5	89	87	71-125	2	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.5	19.5	98	98	75-125	0	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889202 2889203

Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.4	19.3	97	96	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	24.0	24.2	120	121	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	22.0	22.1	110	111	75-126	1	30	
Diisopropyl ether	ug/L	<0.12	20	20	19.4	19.5	97	97	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.4	19.4	97	97	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	19.5	19.6	97	98	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	23.0	21.5	115	108	60-150	7	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	19.8	20.0	99	100	75-125	1	30	
m&p-Xylene	ug/L	<0.24	40	40	39.0	40.7	97	102	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	19.1	19.2	96	96	75-125	0	30	
Methylene Chloride	ug/L	<1.2	20	20	18.4	18.5	92	92	72-125	0	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.3	20.7	106	104	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	19.6	19.9	98	99	75-126	2	30	
Naphthalene	ug/L	<0.42	20	20	18.5	19.2	93	96	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	19.3	19.6	96	98	75-125	1	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	20.7	20.0	104	100	73-133	3	30	
sec-Butylbenzene	ug/L	<0.12	20	20	20.6	20.5	103	102	75-132	0	30	
Styrene	ug/L	<0.14	20	20	19.7	19.9	99	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	18.9	19.2	94	96	71-125	1	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	188	188	94	94	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.2	19.8	96	99	75-126	3	30	
Tetrachloroethene	ug/L	4.3	20	20	23.5	24.2	96	99	75-125	3	30	
Tetrahydrofuran	ug/L	<4.3	200	200	302	300	151	150	75-150	1	30	M1
Toluene	ug/L	<0.17	20	20	19.2	19.1	96	96	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	20.0	19.9	99	99	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	17.8	17.6	89	88	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.0	48.0	98	96	57-125	2	30	
Trichloroethene	ug/L	62.3	20	20	79.0	80.8	84	93	75-125	2	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.4	23.3	117	116	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.0	19.0	95	95	57-136	0	30	
Vinyl chloride	ug/L	0.65	20	20	23.5	23.2	114	113	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	58.3	60.2	97	100	75-125	3	30	
1,2-Dichloroethane-d4 (S)	%.						101	101	75-125			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

WORKORDER QUALIFIERS

WO: 10426984

[1] The trip blank received for this project is shared and reported on work order # 10426976.

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426984

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426984001	**Marlow-GW-041018**	EPA 8260B	531987		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

WO#: 10426984

10426984

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	UPRR_Freeman
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Theriault
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency	
State / Location	WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test (Y/N)	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	Marlow-GW-041018	WT	G			4/10/18	1050		3				X				X													CW
2	TB-041018	WT	/			4/10/18	0200		2				X				X													Trip Blank
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	LKB / CH2M	4/10/18	1411	[illegible] PACE	4-11-18	930	4.5	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L. Baumann

SIGNATURE of SAMPLER: L K Baumann

DATE Signed: 4/10/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: F-MN-L-210-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10426984

PM: JMG **Due Date: 04/18/18**

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other: ______

Tracking Number: 7475 9638 7740

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: ______ **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.3 **Cooler Temp Corrected (°C):** 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 4-11-18 [initials]

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No MS/MSD
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		9.
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: ______ Lot # of added preservative: ______
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14. 6mm headspace in 1 TB vial
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15. Shared w/ 10426976
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 153940				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ______ Date/Time: ______

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time:	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/12/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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April 16, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10426986

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426986001	**Randall-GW-041018**	Water	04/10/18 09:00	04/11/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426986001	**Randall-GW-041018**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426986001	**Randall-GW-041018**					
EPA 8260B	Carbon tetrachloride	251	ug/L	1.0	04/13/18 13:37	
EPA 8260B	Chloroform	10.3	ug/L	1.0	04/12/18 14:35	

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Date: April 16, 2018

The trip blank received for this project is shared and reported on work order # 10426976.

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 531987

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2888939)
    - Bromomethane
- MS (Lab ID: 2889202)
    - Bromomethane
- MSD (Lab ID: 2889203)
    - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 531987

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10427058001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2889202)
    - Acetone
    - Tetrahydrofuran

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: April 16, 2018

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Sample: Randall-GW-041018 **Lab ID: 10426986001** Collected: 04/10/18 09:00 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	1.0	0.14	1		04/12/18 14:35	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		04/12/18 14:35	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		04/12/18 14:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		04/12/18 14:35	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:35	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:35	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		04/12/18 14:35	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		04/12/18 14:35	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	10.0	1.0	1		04/12/18 14:35	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		04/12/18 14:35	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		04/12/18 14:35	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:35	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		04/12/18 14:35	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		04/12/18 14:35	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		04/12/18 14:35	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:35	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		04/12/18 14:35	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		04/12/18 14:35	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		04/12/18 14:35	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		04/12/18 14:35	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		04/12/18 14:35	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:35	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		04/12/18 14:35	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		04/12/18 14:35	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		04/12/18 14:35	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		04/12/18 14:35	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		04/12/18 14:35	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:35	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		04/12/18 14:35	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:35	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		04/12/18 14:35	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		04/12/18 14:35	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		04/12/18 14:35	75-15-0	
Carbon tetrachloride	**251**	ug/L	1.0	0.40	2		04/13/18 13:37	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		04/12/18 14:35	75-00-3	
Chloroform	**10.3**	ug/L	1.0	0.46	1		04/12/18 14:35	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		04/12/18 14:35	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	1.0	0.13	1		04/12/18 14:35	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Sample: Randall-GW-041018 **Lab ID: 10426986001** Collected: 04/10/18 09:00 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		04/12/18 14:35	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		04/12/18 14:35	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		04/12/18 14:35	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		04/12/18 14:35	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		04/12/18 14:35	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		04/12/18 14:35	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		04/12/18 14:35	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		04/12/18 14:35	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		04/12/18 14:35	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		04/12/18 14:35	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		04/12/18 14:35	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		04/12/18 14:35	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		04/12/18 14:35	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		04/12/18 14:35	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		04/12/18 14:35	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		04/12/18 14:35	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		04/12/18 14:35	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		04/12/18 14:35	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:35	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		04/12/18 14:35	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		04/12/18 14:35	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:35	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		04/12/18 14:35	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		04/12/18 14:35	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		04/12/18 14:35	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		04/12/18 14:35	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	1.0	0.14	1		04/12/18 14:35	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		04/12/18 14:35	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		04/12/18 14:35	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		04/12/18 14:35	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		04/12/18 14:35	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

QC Batch: 531987 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10426986001

METHOD BLANK: 2888938 Matrix: Water
Associated Lab Samples: 10426986001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	1.0	0.14	04/12/18 10:38	MN
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	04/12/18 10:38	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	04/12/18 10:38	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	04/12/18 10:38	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	04/12/18 10:38	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	04/12/18 10:38	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	10.0	1.0	04/12/18 10:38	MN
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	04/12/18 10:38	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	04/12/18 10:38	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	04/12/18 10:38	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	04/12/18 10:38	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	04/12/18 10:38	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	04/12/18 10:38	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	04/12/18 10:38	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	04/12/18 10:38	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	04/12/18 10:38	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	04/12/18 10:38	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
2-Hexanone	ug/L	<2.5	5.0	2.5	04/12/18 10:38	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	04/12/18 10:38	
Acetone	ug/L	<8.8	20.0	8.8	04/12/18 10:38	
Acrolein	ug/L	<4.8	10.0	4.8	04/12/18 10:38	
Acrylonitrile	ug/L	<4.9	10.0	4.9	04/12/18 10:38	
Benzene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Bromobenzene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
Bromochloromethane	ug/L	<0.38	1.0	0.38	04/12/18 10:38	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
Bromoform	ug/L	<1.0	4.0	1.0	04/12/18 10:38	
Bromomethane	ug/L	<1.5	4.0	1.5	04/12/18 10:38	
Carbon disulfide	ug/L	<0.37	1.0	0.37	04/12/18 10:38	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	04/12/18 10:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

METHOD BLANK: 2888938 Matrix: Water
Associated Lab Samples: 10426986001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Chloroethane	ug/L	<0.44	1.0	0.44	04/12/18 10:38	
Chloroform	ug/L	<0.46	1.0	0.46	04/12/18 10:38	
Chloromethane	ug/L	<1.1	4.0	1.1	04/12/18 10:38	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	04/12/18 10:38	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	04/12/18 10:38	MN
Dibromochloromethane	ug/L	<0.13	1.0	0.13	04/12/18 10:38	MN
Dibromomethane	ug/L	<0.50	1.0	0.50	04/12/18 10:38	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	04/12/18 10:38	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	04/12/18 10:38	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	04/12/18 10:38	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	04/12/18 10:38	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
m&p-Xylene	ug/L	<0.24	1.0	0.24	04/12/18 10:38	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
Methylene Chloride	ug/L	<1.2	4.0	1.2	04/12/18 10:38	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
Naphthalene	ug/L	<0.42	1.0	0.42	04/12/18 10:38	
o-Xylene	ug/L	<0.11	0.50	0.11	04/12/18 10:38	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
Styrene	ug/L	<0.14	0.50	0.14	04/12/18 10:38	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	04/12/18 10:38	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	04/12/18 10:38	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/12/18 10:38	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	04/12/18 10:38	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	04/12/18 10:38	
Toluene	ug/L	<0.17	0.50	0.17	04/12/18 10:38	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	04/12/18 10:38	
trans-1,3-Dichloropropene	ug/L	<0.14	1.0	0.14	04/12/18 10:38	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	04/12/18 10:38	
Trichloroethene	ug/L	<0.18	0.40	0.18	04/12/18 10:38	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	04/12/18 10:38	
Vinyl acetate	ug/L	<1.5	10.0	1.5	04/12/18 10:38	
Vinyl chloride	ug/L	<0.096	0.20	0.096	04/12/18 10:38	
Xylene (Total)	ug/L	<0.24	1.5	0.24	04/12/18 10:38	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		04/12/18 10:38	
4-Bromofluorobenzene (S)	%.	98	75-125		04/12/18 10:38	
Toluene-d8 (S)	%.	98	75-125		04/12/18 10:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

LABORATORY CONTROL SAMPLE: 2888939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.0	100	75-125	
1,1,1-Trichloroethane	ug/L	20	21.2	106	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	75-125	
1,1,2-Trichloroethane	ug/L	20	20.7	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.5	107	72-125	
1,1-Dichloroethane	ug/L	20	20.1	100	75-125	
1,1-Dichloroethene	ug/L	20	20.4	102	73-125	
1,1-Dichloropropene	ug/L	20	20.2	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.1	100	72-130	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.8	99	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	45.6	91	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.1	100	75-125	
1,2-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,2-Dichloroethane	ug/L	20	19.1	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.9	100	75-125	
1,2-Dichloropropane	ug/L	20	20.5	102	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.5	102	75-125	
1,3-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,3-Dichloropropane	ug/L	20	20.2	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	367	92	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.8	109	64-130	
2,2-Dichloropropane	ug/L	20	20.8	104	68-129	
2-Butanone (MEK)	ug/L	100	98.8	99	65-126	
2-Chlorotoluene	ug/L	20	19.5	97	75-125	
2-Hexanone	ug/L	100	110	110	75-134	
4-Chlorotoluene	ug/L	20	20.2	101	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	227	114	63-149	
Acrylonitrile	ug/L	200	220	110	75-125	
Benzene	ug/L	20	19.9	99	75-125	
Bromobenzene	ug/L	20	19.9	99	75-125	
Bromochloromethane	ug/L	20	21.2	106	75-125	
Bromodichloromethane	ug/L	20	20.7	104	75-125	
Bromoform	ug/L	20	20.7	103	70-125	
Bromomethane	ug/L	20	28.5	142	30-145	CH
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	21.1	106	75-125	
Chlorobenzene	ug/L	20	20.4	102	75-125	
Chloroethane	ug/L	20	23.1	116	73-131	
Chloroform	ug/L	20	19.5	98	75-125	
Chloromethane	ug/L	20	25.0	125	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.1	101	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	75-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

LABORATORY CONTROL SAMPLE: 2888939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.3	101	75-125	
Dibromomethane	ug/L	20	20.1	100	75-125	
Dichlorodifluoromethane	ug/L	20	22.9	114	64-127	
Dichlorofluoromethane	ug/L	20	21.6	108	75-125	
Diisopropyl ether	ug/L	20	20.4	102	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.5	103	75-125	
Ethylbenzene	ug/L	20	20.7	103	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.8	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.9	104	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-125	
Methyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Methylene Chloride	ug/L	20	19.1	95	72-125	
n-Butylbenzene	ug/L	20	20.5	102	75-125	
n-Propylbenzene	ug/L	20	20.4	102	75-125	
Naphthalene	ug/L	20	19.5	97	61-136	
o-Xylene	ug/L	20	20.3	102	75-125	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	20.8	104	75-125	
Styrene	ug/L	20	21.0	105	75-125	
tert-Amylmethyl ether	ug/L	20	20.2	101	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-125	
tert-Butylbenzene	ug/L	20	19.7	98	75-125	
Tetrachloroethene	ug/L	20	20.2	101	75-125	
Tetrahydrofuran	ug/L	200	211	106	64-150	
Toluene	ug/L	20	20.2	101	75-125	
trans-1,2-Dichloroethene	ug/L	20	19.8	99	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.7	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	51.4	103	57-126	
Trichloroethene	ug/L	20	20.0	100	75-125	
Trichlorofluoromethane	ug/L	20	22.7	113	74-126	
Vinyl acetate	ug/L	20	19.5	97	72-129	
Vinyl chloride	ug/L	20	21.6	108	71-130	
Xylene (Total)	ug/L	60	62.7	104	75-125	
1,2-Dichloroethane-d4 (S)	%.			101	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889202 2889203

Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.14	20	20	19.1	18.9	96	94	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.15	20	20	21.3	21.7	107	108	75-129	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	19.4	19.8	97	99	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.22	20	20	19.9	20.1	100	101	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889202 2889203

Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	20	20	21.8	21.7	109	108	75-136	0	30	
1,1-Dichloroethane	ug/L	2.1	20	20	21.8	21.9	98	99	75-125	0	30	
1,1-Dichloroethene	ug/L	0.27J	20	20	21.5	21.0	106	103	75-127	3	30	
1,1-Dichloropropene	ug/L	<0.18	20	20	20.1	20.2	101	101	75-129	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.14	20	20	20.5	20.0	102	100	72-137	3	30	
1,2,3-Trichloropropane	ug/L	<0.66	20	20	19.1	18.5	96	92	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.18	20	20	19.5	18.8	97	94	69-131	4	30	
1,2,4-Trimethylbenzene	ug/L	<0.098	20	20	19.0	19.3	95	97	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	42.9	43.3	86	87	61-127	1	30	
1,2-Dibromoethane (EDB)	ug/L	<0.17	20	20	19.0	19.2	95	96	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.21	20	20	19.0	19.4	95	97	75-125	2	30	
1,2-Dichloroethane	ug/L	<0.15	20	20	18.1	18.2	91	91	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	3.8	40	40	43.0	43.2	98	98	75-125	0	30	
1,2-Dichloropropane	ug/L	<0.62	20	20	19.4	19.3	97	96	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.18	20	20	20.0	20.3	100	101	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
1,3-Dichloropropane	ug/L	<0.13	20	20	19.4	19.1	97	95	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.10	20	20	18.9	19.1	94	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	400	400	346	349	86	87	67-128	1	30	
2,2,4-Trimethylpentane	ug/L	<1.3	20	20	23.3	22.3	116	112	65-150	4	30	
2,2-Dichloropropane	ug/L	<0.40	20	20	20.9	20.9	104	105	65-136	0	30	
2-Butanone (MEK)	ug/L	<2.4	100	100	91.2	91.5	91	92	59-125	0	30	
2-Chlorotoluene	ug/L	<0.20	20	20	18.4	18.7	92	94	73-126	2	30	
2-Hexanone	ug/L	<2.5	100	100	102	100	102	100	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.6	20.0	98	100	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	100	100	99.9	99.9	100	100	73-125	0	30	
Acetone	ug/L	<8.8	100	100	151	150	151	150	75-150	1	30	M1
Acrolein	ug/L	<4.8	200	200	217	220	108	110	53-150	1	30	
Acrylonitrile	ug/L	<4.9	200	200	198	201	99	101	69-127	2	30	
Benzene	ug/L	<0.13	20	20	19.5	19.6	98	98	74-125	0	30	
Bromobenzene	ug/L	<0.16	20	20	19.4	19.3	97	96	75-125	1	30	
Bromochloromethane	ug/L	<0.38	20	20	20.0	20.2	100	101	75-125	1	30	
Bromodichloromethane	ug/L	<0.20	20	20	19.6	19.5	98	98	75-125	1	30	
Bromoform	ug/L	<1.0	20	20	19.5	19.5	97	97	68-125	0	30	
Bromomethane	ug/L	<1.5	20	20	28.4	29.8	142	149	37-149	5	30	CH
Carbon disulfide	ug/L	<0.37	20	20	17.5	17.2	87	86	66-139	2	30	
Carbon tetrachloride	ug/L	<0.20	20	20	21.2	21.3	106	106	75-127	1	30	
Chlorobenzene	ug/L	<0.14	20	20	19.4	19.6	97	98	75-125	1	30	
Chloroethane	ug/L	<0.44	20	20	23.1	23.3	115	117	73-134	1	30	
Chloroform	ug/L	<0.46	20	20	18.6	18.6	93	93	71-125	0	30	
Chloromethane	ug/L	<1.1	20	20	25.5	24.3	127	122	58-133	5	30	
cis-1,2-Dichloroethene	ug/L	3.6	20	20	23.0	23.2	97	98	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	17.8	17.5	89	87	71-125	2	30	
Dibromochloromethane	ug/L	<0.13	20	20	19.5	19.5	98	98	75-125	0	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889202 2889203

Parameter	Units	10427058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.50	20	20	19.4	19.3	97	96	75-125	1	30	
Dichlorodifluoromethane	ug/L	<0.31	20	20	24.0	24.2	120	121	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.38	20	20	22.0	22.1	110	111	75-126	1	30	
Diisopropyl ether	ug/L	<0.12	20	20	19.4	19.5	97	97	66-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.13	20	20	19.4	19.4	97	97	74-125	0	30	
Ethylbenzene	ug/L	<0.14	20	20	19.5	19.6	97	98	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.48	20	20	23.0	21.5	115	108	60-150	7	30	
Isopropylbenzene (Cumene)	ug/L	<0.14	20	20	19.8	20.0	99	100	75-125	1	30	
m&p-Xylene	ug/L	<0.24	40	40	39.0	40.7	97	102	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.14	20	20	19.1	19.2	96	96	75-125	0	30	
Methylene Chloride	ug/L	<1.2	20	20	18.4	18.5	92	92	72-125	0	30	
n-Butylbenzene	ug/L	<0.13	20	20	21.3	20.7	106	104	73-140	3	30	
n-Propylbenzene	ug/L	<0.12	20	20	19.6	19.9	98	99	75-126	2	30	
Naphthalene	ug/L	<0.42	20	20	18.5	19.2	93	96	61-136	3	30	
o-Xylene	ug/L	<0.11	20	20	19.3	19.6	96	98	75-125	1	30	
p-Isopropyltoluene	ug/L	<0.14	20	20	20.7	20.0	104	100	73-133	3	30	
sec-Butylbenzene	ug/L	<0.12	20	20	20.6	20.5	103	102	75-132	0	30	
Styrene	ug/L	<0.14	20	20	19.7	19.9	99	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.12	20	20	18.9	19.2	94	96	71-125	1	30	
tert-Butyl Alcohol	ug/L	<2.2	200	200	188	188	94	94	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.2	19.8	96	99	75-126	3	30	
Tetrachloroethene	ug/L	4.3	20	20	23.5	24.2	96	99	75-125	3	30	
Tetrahydrofuran	ug/L	<4.3	200	200	302	300	151	150	75-150	1	30	M1
Toluene	ug/L	<0.17	20	20	19.2	19.1	96	96	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	20.0	19.9	99	99	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	<0.14	20	20	17.8	17.6	89	88	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	50	50	49.0	48.0	98	96	57-125	2	30	
Trichloroethene	ug/L	62.3	20	20	79.0	80.8	84	93	75-125	2	30	
Trichlorofluoromethane	ug/L	<0.13	20	20	23.4	23.3	117	116	75-135	1	30	
Vinyl acetate	ug/L	<1.5	20	20	19.0	19.0	95	95	57-136	0	30	
Vinyl chloride	ug/L	0.65	20	20	23.5	23.2	114	113	74-141	1	30	
Xylene (Total)	ug/L	<0.24	60	60	58.3	60.2	97	100	75-125	3	30	
1,2-Dichloroethane-d4 (S)	%.						101	101	75-125			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

WORKORDER QUALIFIERS

WO: 10426986

[1] The trip blank received for this project is shared and reported on work order # 10426976.

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426986

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426986001	**Randall-GW-041018**	EPA 8260B	531987		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 10426986

10426986

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: UPRR_Freeman	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	Randall-GW-041018	WT	G			4/10/18	0900		3				X				X													GW
2	TB-041018	WT	/			4/10/18	0700		2				X				X													Trip Blank
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	LKB/CH2M	4/10/18	1409	[signature] PACE	4-11-18	930	4.5	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L. Baumann

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/10/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10426986

PM: JMG Due Date: 04/18/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 7740

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.3 **Cooler Temp Corrected (°C):** 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 4-11-18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No MS/MSD
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		9.
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14. <6mm M 1 TB vial
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15. Shared w/ 10426976
Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): 153940	☑ Yes	☐ No	☐ N/A	

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time:	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 04/12/18

Note: Whenever there is a discrepancy affecting North Carolina compli[ance samples, a copy of t]his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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(612)607-1700

April 24, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 UPRR_Freeman
Pace Project No.:	10426987

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10426987001	**Marlow-GW-041018**	Water	04/10/18 10:50	04/11/18 09:30
10426987002	**Randall-GW-041018**	Water	04/10/18 09:00	04/11/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10426987001	**Marlow-GW-041018**	RSK 175	DR1	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10426987002	**Randall-GW-041018**	RSK 175	DR1	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	MCT	1	PASI-N
		EPA 300.0	AR3	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10426987001	**Marlow-GW-041018**					
RSK 175	Ethene	0.75J	ug/L	10.0	04/12/18 13:13	
RSK 175	Methane	1.6J	ug/L	10.0	04/12/18 13:13	
EPA 6010D	Barium, Dissolved	38.0	ug/L	10.0	04/12/18 13:14	
EPA 6010D	Calcium, Dissolved	50300	ug/L	500	04/12/18 13:14	
EPA 6010D	Copper, Dissolved	9.4J	ug/L	10.0	04/12/18 13:14	
EPA 6010D	Magnesium, Dissolved	14700	ug/L	500	04/12/18 13:14	
EPA 6010D	Potassium, Dissolved	1820J	ug/L	2500	04/12/18 13:14	
EPA 6010D	Sodium, Dissolved	14500	ug/L	1000	04/12/18 13:14	
EPA 6010D	Vanadium, Dissolved	9.0J	ug/L	15.0	04/12/18 13:14	
EPA 6010D	Zinc, Dissolved	21.8	ug/L	20.0	04/12/18 13:14	
SM 2320B	Alkalinity, Total as CaCO3	166	mg/L	5.0	04/17/18 09:50	
SM 2540C	Total Dissolved Solids	288	mg/L	20.0	04/17/18 15:13	
EPA 300.0	Chloride	16.5	mg/L	1.2	04/12/18 09:33	
EPA 300.0	Nitrate as N	3.9	mg/L	0.10	04/12/18 07:45	
EPA 300.0	Sulfate	13.7	mg/L	1.2	04/12/18 09:33	
EPA 353.2	Nitrogen, NO2 plus NO3	3.9	mg/L	0.10	04/17/18 09:30	
SM 5310C	Total Organic Carbon	0.84J	mg/L	1.0	04/18/18 00:59	
10426987002	**Randall-GW-041018**					
EPA 6010D	Barium, Dissolved	22.7	ug/L	10.0	04/12/18 13:17	
EPA 6010D	Calcium, Dissolved	46000	ug/L	500	04/12/18 13:17	
EPA 6010D	Chromium, Dissolved	5.6J	ug/L	10.0	04/12/18 13:17	
EPA 6010D	Copper, Dissolved	12.8	ug/L	10.0	04/12/18 13:17	
EPA 6010D	Iron, Dissolved	72.3	ug/L	50.0	04/12/18 13:17	
EPA 6010D	Lead, Dissolved	3.3J	ug/L	10.0	04/12/18 13:17	
EPA 6010D	Magnesium, Dissolved	14800	ug/L	500	04/12/18 13:17	
EPA 6010D	Manganese, Dissolved	1.8J	ug/L	5.0	04/12/18 13:17	
EPA 6010D	Potassium, Dissolved	1530J	ug/L	2500	04/12/18 13:17	
EPA 6010D	Sodium, Dissolved	14700	ug/L	1000	04/12/18 13:17	
EPA 6010D	Vanadium, Dissolved	6.0J	ug/L	15.0	04/12/18 13:17	
EPA 6010D	Zinc, Dissolved	333	ug/L	20.0	04/12/18 13:17	
SM 2320B	Alkalinity, Total as CaCO3	184	mg/L	5.0	04/17/18 09:53	
SM 2540C	Total Dissolved Solids	245	mg/L	10.0	04/17/18 15:13	
EPA 300.0	Chloride	5.2	mg/L	1.2	04/12/18 09:48	M1
EPA 300.0	Nitrate as N	2.2	mg/L	0.10	04/12/18 08:00	M1
EPA 300.0	Sulfate	8.4	mg/L	1.2	04/12/18 09:48	M1
EPA 353.2	Nitrogen, NO2 plus NO3	2.3	mg/L	0.10	04/21/18 15:00	
SM 5310C	Total Organic Carbon	0.48J	mg/L	1.0	04/18/18 02:05	

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman
Pace Project No.:	10426987

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 UPRR_Freeman
Pace Project No.:	10426987

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 531969

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10426987002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2888917)
  - Chloride
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 2888918)
  - Chloride
  - Nitrate as N
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: April 24, 2018

General Information:
2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Sample: Marlow-GW-041018 **Lab ID: 10426987001** Collected: 04/10/18 10:50 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		04/12/18 13:13	74-84-0	
Ethene	**0.75J**	ug/L	10.0	0.68	1		04/12/18 13:13	74-85-1	
Methane	**1.6J**	ug/L	10.0	1.1	1		04/12/18 13:13	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	04/12/18 10:13	04/12/18 13:14	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	04/12/18 10:13	04/12/18 13:14	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	04/12/18 10:13	04/12/18 13:14	7440-38-2	
Barium, Dissolved	**38.0**	ug/L	10.0	0.22	1	04/12/18 10:13	04/12/18 13:14	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	04/12/18 10:13	04/12/18 13:14	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	04/12/18 10:13	04/12/18 13:14	7440-43-9	
Calcium, Dissolved	**50300**	ug/L	500	24.7	1	04/12/18 10:13	04/12/18 13:14	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	10.0	0.50	1	04/12/18 10:13	04/12/18 13:14	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	04/12/18 10:13	04/12/18 13:14	7440-48-4	
Copper, Dissolved	**9.4J**	ug/L	10.0	0.83	1	04/12/18 10:13	04/12/18 13:14	7440-50-8	
Iron, Dissolved	**<16.7**	ug/L	50.0	16.7	1	04/12/18 10:13	04/12/18 13:14	7439-89-6	
Lead, Dissolved	**<3.0**	ug/L	10.0	3.0	1	04/12/18 10:13	04/12/18 13:14	7439-92-1	
Magnesium, Dissolved	**14700**	ug/L	500	2.6	1	04/12/18 10:13	04/12/18 13:14	7439-95-4	
Manganese, Dissolved	**<0.38**	ug/L	5.0	0.38	1	04/12/18 10:13	04/12/18 13:14	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	04/12/18 10:13	04/12/18 13:14	7440-02-0	
Potassium, Dissolved	**1820J**	ug/L	2500	126	1	04/12/18 10:13	04/12/18 13:14	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	04/12/18 10:13	04/12/18 13:14	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	04/12/18 10:13	04/12/18 13:14	7440-22-4	
Sodium, Dissolved	**14500**	ug/L	1000	44.6	1	04/12/18 10:13	04/12/18 13:14	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	04/12/18 10:13	04/12/18 13:14	7440-28-0	
Vanadium, Dissolved	**9.0J**	ug/L	15.0	0.42	1	04/12/18 10:13	04/12/18 13:14	7440-62-2	
Zinc, Dissolved	**21.8**	ug/L	20.0	1.8	1	04/12/18 10:13	04/12/18 13:14	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	04/12/18 09:05	04/12/18 14:52	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**166**	mg/L	5.0	1.4	1		04/17/18 09:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**288**	mg/L	20.0	10.0	1		04/17/18 15:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		04/14/18 09:22	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**16.5**	mg/L	1.2	0.14	1		04/12/18 09:33	16887-00-6	
Nitrate as N	**3.9**	mg/L	0.10	0.0079	1		04/12/18 07:45	14797-55-8	
Sulfate	**13.7**	mg/L	1.2	0.27	1		04/12/18 09:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Sample: Marlow-GW-041018 **Lab ID: 10426987001** Collected: 04/10/18 10:50 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.9**	mg/L	0.10	0.037	5		04/17/18 09:30		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	04/16/18 13:02	04/16/18 16:55		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.84J**	mg/L	1.0	0.20	1		04/18/18 00:59	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Sample: Randall-GW-041018 **Lab ID: 10426987002** Collected: 04/10/18 09:00 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<4.9**	ug/L	10.0	4.9	1		04/12/18 13:21	74-84-0	
Ethene	**<0.68**	ug/L	10.0	0.68	1		04/12/18 13:21	74-85-1	
Methane	**<1.1**	ug/L	10.0	1.1	1		04/12/18 13:21	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<8.6**	ug/L	200	8.6	1	04/12/18 10:13	04/12/18 13:17	7429-90-5	
Antimony, Dissolved	**<3.1**	ug/L	20.0	3.1	1	04/12/18 10:13	04/12/18 13:17	7440-36-0	
Arsenic, Dissolved	**<5.2**	ug/L	20.0	5.2	1	04/12/18 10:13	04/12/18 13:17	7440-38-2	
Barium, Dissolved	**22.7**	ug/L	10.0	0.22	1	04/12/18 10:13	04/12/18 13:17	7440-39-3	
Beryllium, Dissolved	**<0.11**	ug/L	5.0	0.11	1	04/12/18 10:13	04/12/18 13:17	7440-41-7	
Cadmium, Dissolved	**<0.46**	ug/L	3.0	0.46	1	04/12/18 10:13	04/12/18 13:17	7440-43-9	
Calcium, Dissolved	**46000**	ug/L	500	24.7	1	04/12/18 10:13	04/12/18 13:17	7440-70-2	
Chromium, Dissolved	**5.6J**	ug/L	10.0	0.50	1	04/12/18 10:13	04/12/18 13:17	7440-47-3	
Cobalt, Dissolved	**<1.1**	ug/L	10.0	1.1	1	04/12/18 10:13	04/12/18 13:17	7440-48-4	
Copper, Dissolved	**12.8**	ug/L	10.0	0.83	1	04/12/18 10:13	04/12/18 13:17	7440-50-8	
Iron, Dissolved	**72.3**	ug/L	50.0	16.7	1	04/12/18 10:13	04/12/18 13:17	7439-89-6	
Lead, Dissolved	**3.3J**	ug/L	10.0	3.0	1	04/12/18 10:13	04/12/18 13:17	7439-92-1	
Magnesium, Dissolved	**14800**	ug/L	500	2.6	1	04/12/18 10:13	04/12/18 13:17	7439-95-4	
Manganese, Dissolved	**1.8J**	ug/L	5.0	0.38	1	04/12/18 10:13	04/12/18 13:17	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	04/12/18 10:13	04/12/18 13:17	7440-02-0	
Potassium, Dissolved	**1530J**	ug/L	2500	126	1	04/12/18 10:13	04/12/18 13:17	7440-09-7	
Selenium, Dissolved	**<6.4**	ug/L	20.0	6.4	1	04/12/18 10:13	04/12/18 13:17	7782-49-2	
Silver, Dissolved	**<0.27**	ug/L	10.0	0.27	1	04/12/18 10:13	04/12/18 13:17	7440-22-4	
Sodium, Dissolved	**14700**	ug/L	1000	44.6	1	04/12/18 10:13	04/12/18 13:17	7440-23-5	
Thallium, Dissolved	**<4.8**	ug/L	20.0	4.8	1	04/12/18 10:13	04/12/18 13:17	7440-28-0	
Vanadium, Dissolved	**6.0J**	ug/L	15.0	0.42	1	04/12/18 10:13	04/12/18 13:17	7440-62-2	
Zinc, Dissolved	**333**	ug/L	20.0	1.8	1	04/12/18 10:13	04/12/18 13:17	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.062**	ug/L	0.20	0.062	1	04/12/18 09:05	04/12/18 14:54	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**184**	mg/L	5.0	1.4	1		04/17/18 09:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**245**	mg/L	10.0	5.0	1		04/17/18 15:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0050**	mg/L	0.020	0.0050	1		04/14/18 09:23	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.2**	mg/L	1.2	0.14	1		04/12/18 09:48	16887-00-6	M1
Nitrate as N	**2.2**	mg/L	0.10	0.0079	1		04/12/18 08:00	14797-55-8	M1
Sulfate	**8.4**	mg/L	1.2	0.27	1		04/12/18 09:48	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Sample: Randall-GW-041018 **Lab ID: 10426987002** Collected: 04/10/18 09:00 Received: 04/11/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.3**	mg/L	0.10	0.037	5		04/21/18 15:00		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<15.8**	mg/L	50.0	15.8	1	04/16/18 13:02	04/16/18 16:55		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.48J**	mg/L	1.0	0.20	1		04/18/18 02:05	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 532012 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2889017 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<4.9	10.0	4.9	04/12/18 09:35	
Ethene	ug/L	<0.68	10.0	0.68	04/12/18 09:35	
Methane	ug/L	1.4J	10.0	1.1	04/12/18 09:35	

LABORATORY CONTROL SAMPLE & LCSD: 2889018 | 2889019

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	103	108	91	95	85-115	5	20	
Ethene	ug/L	106	96.0	102	90	96	85-115	6	20	
Methane	ug/L	60.7	55.4	58.6	91	97	85-115	6	20	

SAMPLE DUPLICATE: 2889699

Parameter	Units	60267650001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	41.7	45.6	9	20	
Ethene	ug/L	1.1J	1.2J		20	
Methane	ug/L	10000	10300	3	20	

SAMPLE DUPLICATE: 2889700

Parameter	Units	60267742001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<4.9		20	
Ethene	ug/L	ND	<0.68		20	
Methane	ug/L	1.5J	1.8J		20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 531957 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2888874 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.062	0.20	0.062	04/12/18 14:23	

LABORATORY CONTROL SAMPLE: 2888875

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888876 2888877

Parameter	Units	10426925002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.5	5.5	110	110	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 531945 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2888827 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<8.6	200	8.6	04/12/18 12:52	
Antimony, Dissolved	ug/L	<3.1	20.0	3.1	04/12/18 12:52	
Arsenic, Dissolved	ug/L	<5.2	20.0	5.2	04/12/18 12:52	
Barium, Dissolved	ug/L	<0.22	10.0	0.22	04/12/18 12:52	
Beryllium, Dissolved	ug/L	<0.11	5.0	0.11	04/12/18 12:52	
Cadmium, Dissolved	ug/L	<0.46	3.0	0.46	04/12/18 12:52	
Calcium, Dissolved	ug/L	<24.7	500	24.7	04/12/18 12:52	
Chromium, Dissolved	ug/L	<0.50	10.0	0.50	04/12/18 12:52	
Cobalt, Dissolved	ug/L	<1.1	10.0	1.1	04/12/18 12:52	
Copper, Dissolved	ug/L	<0.83	10.0	0.83	04/12/18 12:52	
Iron, Dissolved	ug/L	<16.7	50.0	16.7	04/12/18 12:52	
Lead, Dissolved	ug/L	<3.0	10.0	3.0	04/12/18 12:52	
Magnesium, Dissolved	ug/L	<2.6	500	2.6	04/12/18 12:52	
Manganese, Dissolved	ug/L	<0.38	5.0	0.38	04/12/18 12:52	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	04/12/18 12:52	
Potassium, Dissolved	ug/L	<126	2500	126	04/12/18 12:52	
Selenium, Dissolved	ug/L	<6.4	20.0	6.4	04/12/18 12:52	
Silver, Dissolved	ug/L	<0.27	10.0	0.27	04/12/18 12:52	
Sodium, Dissolved	ug/L	<44.6	1000	44.6	04/12/18 12:52	
Thallium, Dissolved	ug/L	<4.8	20.0	4.8	04/12/18 12:52	
Vanadium, Dissolved	ug/L	<0.42	15.0	0.42	04/12/18 12:52	
Zinc, Dissolved	ug/L	<1.8	20.0	1.8	04/12/18 12:52	

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	108	80-120	
Antimony, Dissolved	ug/L	1000	1030	103	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1040	104	80-120	
Beryllium, Dissolved	ug/L	1000	1040	104	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19600	98	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	1020	102	80-120	
Iron, Dissolved	ug/L	20000	20600	103	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Magnesium, Dissolved	ug/L	20000	20400	102	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

LABORATORY CONTROL SAMPLE: 2888828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20500	103	80-120	
Selenium, Dissolved	ug/L	1000	1090	109	80-120	
Silver, Dissolved	ug/L	500	500	100	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	992	99	80-120	
Zinc, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888829 2888830

Parameter	Units	10426000001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	9.6J	20000	20000	21700	21800	109	109	75-125	0	20	
Antimony, Dissolved	ug/L	<3.1	1000	1000	1030	1040	103	104	75-125	0	20	
Arsenic, Dissolved	ug/L	<5.2	1000	1000	1030	1040	103	104	75-125	0	20	
Barium, Dissolved	ug/L	19.1	1000	1000	1050	1060	103	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.11	1000	1000	1040	1040	104	104	75-125	0	20	
Cadmium, Dissolved	ug/L	<0.46	1000	1000	1030	1030	103	103	75-125	0	20	
Calcium, Dissolved	ug/L	45400	20000	20000	64400	64900	95	97	75-125	1	20	
Chromium, Dissolved	ug/L	<0.50	1000	1000	1010	1010	101	101	75-125	0	20	
Cobalt, Dissolved	ug/L	<1.1	1000	1000	1000	1000	100	100	75-125	0	20	
Copper, Dissolved	ug/L	6.8J	1000	1000	1030	1040	103	103	75-125	0	20	
Iron, Dissolved	ug/L	257	20000	20000	20600	20700	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<3.0	1000	1000	1030	1030	102	103	75-125	0	20	
Magnesium, Dissolved	ug/L	13200	20000	20000	33600	33800	102	103	75-125	1	20	
Manganese, Dissolved	ug/L	12.7	1000	1000	1040	1040	103	103	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	998	999	100	100	75-125	0	20	
Potassium, Dissolved	ug/L	1280J	20000	20000	22500	22700	106	107	75-125	1	20	
Selenium, Dissolved	ug/L	<6.4	1000	1000	1090	1080	109	108	75-125	1	20	
Silver, Dissolved	ug/L	<0.27	500	500	503	505	101	101	75-125	0	20	
Sodium, Dissolved	ug/L	17900	20000	20000	37700	38100	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	<4.8	1000	1000	1000	1010	100	101	75-125	0	20	
Vanadium, Dissolved	ug/L	5.5J	1000	1000	996	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	73.4	1000	1000	1000	1000	93	93	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 532681 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2893034 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.4	5.0	1.4	04/17/18 07:53	

LABORATORY CONTROL SAMPLE & LCSD: 2893035 2893036

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	40.2	106	100	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893037 2893038

Parameter	Units	10427062004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	267	40	40	305	304	97	92	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893039 2893040

Parameter	Units	10427062007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	175	40	40	219	220	109	111	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 532773 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2893304 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	04/17/18 15:13	

LABORATORY CONTROL SAMPLE & LCSD: 2893305 | 2893306

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	996	988	100	99	80-120	1	10	

SAMPLE DUPLICATE: 2893307

Parameter	Units	10427348003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	448	460	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 106904 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 460699 Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0050	0.020	0.0050	04/14/18 09:20	

LABORATORY CONTROL SAMPLE: 460700

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	100	90-110	

MATRIX SPIKE SAMPLE: 460702

Parameter	Units	10426987001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0050	.2	0.19	95	75-125	

SAMPLE DUPLICATE: 460701

Parameter	Units	10426987001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0050	<0.0050		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 531969 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2888915 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.14	1.2	0.14	04/12/18 10:51	FS
Nitrate as N	mg/L	<0.0079	0.10	0.0079	04/12/18 10:51	FS
Sulfate	mg/L	<0.27	1.2	0.27	04/12/18 10:51	FS

LABORATORY CONTROL SAMPLE: 2888916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.3	90	90-110	FS
Nitrate as N	mg/L	1	0.96	96	90-110	FS
Sulfate	mg/L	12.5	12.1	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2888917 2888918

Parameter	Units	10426987002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.2	12.5	12.5	15.5	15.4	83	82	90-110	1	20	M1
Nitrate as N	mg/L	2.2	1	1	2.8	2.8	60	60	90-110	0	20	M1
Sulfate	mg/L	8.4	12.5	12.5	19.3	19.2	88	87	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 532684 — Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 — Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10426987001

METHOD BLANK: 2893051 — Matrix: Water
Associated Lab Samples: 10426987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	04/17/18 09:16	

LABORATORY CONTROL SAMPLE: 2893052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893053 2893054

Parameter	Units	7585383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	18.8	20	20	38.0	37.2	96	92	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893055 2893056

Parameter	Units	10426462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.020	1	1	1.0	0.98	100	97	90-110	4	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 533518 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10426987002

METHOD BLANK: 2898053 | Matrix: Water
Associated Lab Samples: 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.0075	0.020	0.0075	04/21/18 16:08	FS

LABORATORY CONTROL SAMPLE: 2898054

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.97	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2898055 2898056

Parameter	Units	10427620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.34	1	1	1.2	1.2	90	90	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2898057 2898058

Parameter	Units	10427620002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.60	1	1	1.5	1.5	91	92	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 532517 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10426987001, 10426987002

METHOD BLANK: 2891969 | Matrix: Water
Associated Lab Samples: 10426987001, 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<15.8	50.0	15.8	04/16/18 16:47	

LABORATORY CONTROL SAMPLE: 2891970

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2891971 2891972

Parameter	Units	10426920001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	777	250	250	1010	1020	92	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2891973 2891974

Parameter	Units	10426920002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	539	250	250	773	772	94	93	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 140733 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10426987001

METHOD BLANK: 557034 | Matrix: Water
Associated Lab Samples: 10426987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	04/17/18 18:34	

LABORATORY CONTROL SAMPLE: 557035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 557036 557037

Parameter	Units	10427094001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	3.4	25	25	28.6	28.4	101	100	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 557038 557039

Parameter	Units	10427062007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.04	25	25	26.7	26.3	104	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

QC Batch: 140734 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10426987002

METHOD BLANK: 557041 | Matrix: Water
Associated Lab Samples: 10426987002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	04/18/18 01:38	

LABORATORY CONTROL SAMPLE: 557042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 557043 557044

Parameter	Units	12107124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.4	25.2	102	101	80-120	1	20	

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QUALIFIERS

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 UPRR_Freeman
Pace Project No.: 10426987

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10426987001	**Marlow-GW-041018**	RSK 175	532012		
10426987002	**Randall-GW-041018**	RSK 175	532012		
10426987001	**Marlow-GW-041018**	EPA 3010	531945	EPA 6010D	532046
10426987002	**Randall-GW-041018**	EPA 3010	531945	EPA 6010D	532046
10426987001	**Marlow-GW-041018**	EPA 7470A	531957	EPA 7470A	532074
10426987002	**Randall-GW-041018**	EPA 7470A	531957	EPA 7470A	532074
10426987001	**Marlow-GW-041018**	SM 2320B	532681		
10426987002	**Randall-GW-041018**	SM 2320B	532681		
10426987001	**Marlow-GW-041018**	SM 2540C	532773		
10426987002	**Randall-GW-041018**	SM 2540C	532773		
10426987001	**Marlow-GW-041018**	SM 4500-S-2 D	106904		
10426987002	**Randall-GW-041018**	SM 4500-S-2 D	106904		
10426987001	**Marlow-GW-041018**	EPA 300.0	531969		
10426987002	**Randall-GW-041018**	EPA 300.0	531969		
10426987001	**Marlow-GW-041018**	EPA 353.2	532684		
10426987002	**Randall-GW-041018**	EPA 353.2	533518		
10426987001	**Marlow-GW-041018**	EPA 410.4	532517	EPA 410.4	532636
10426987002	**Randall-GW-041018**	EPA 410.4	532517	EPA 410.4	532636
10426987001	**Marlow-GW-041018**	SM 5310C	140733		
10426987002	**Randall-GW-041018**	SM 5310C	140734		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO#: 10426987

10426987

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: UPRR_Freeman	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	**BOD 10360WLL**	Nitrate+Nitrite 353.2	CSIA of CTET (8260 Analysis Required)		
1	Marlow-GW-041018	WT	G			4/10/18	1050		8	X	X	X		X				X	X	X	X	X	X	X	X		X			001
2	Randall-GW-041018	WT	G			4/10/18	0900		8	X	X	X		X				X	X	X	X	X	X	X	X		X			002
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	LB / CH2M	4/10/18	1403	[illegible] / PACE	4-11-18	930	4.5	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L. Baumann

SIGNATURE of SAMPLER: L Baumann

DATE Signed: 4/10/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 18Dec2017 Page 1 of 2
	Document No.: **F-MN-L-210-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO# : 10426987

PM: JMG Due Date: 04/25/18

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9638 7740

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.3 **Cooler Temp Corrected (°C):** 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 4-11-18 AA

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC?	☑ Yes	☐ No		12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-2 ✓ ✓ ✓
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1655	Temp: 4.3	Corrected Temp: 4.5
Time: 1715	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 04/12/18

Note: Whenever there is a discrepancy affecting North Carolina compliance sa[...] will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426987 Workorder Name: 1497 UPRR_Freeman

Owner Received Date: 4/11/2018 Results Requested By: 4/25/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	Marlow-GW-041018	PS	4/10/2018 10:50	10426987001	Water	2	X	
2	Randall-GW-041018	PS	4/10/2018 09:00	10426987002	Water	2	X	
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	4/12/18 1700	[signature]	4-12-18 1900
2	[signature]	4-12-18 2330	B. Mathews	4/13/18 0630
3				

Comments

Cooler Temperature on Receipt 4.9 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO#: 12107090
PM: HRZ **Due Date: 04/25/18**
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 4.6 Cooler Temp Corrected °C: 4.4 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +-0.3 Date and Initials of Person Examining Contents: 4-13-18 PV

Comments: BM 4/13/18

	Yes	No	N/A	
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☐	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☐	☑	☐	12. only Received 1 container each. BM. 4/13/18
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☑	☐	13.
Headspace in VOA Vials (>6mm)?	☐	☑	☐	14.
Trip Blank Present?	☐	☑	☐	15.
Trip Blank Custody Seals Present?	☐	☑	☐	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather [signature] Date: 4/13/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2074491

2074491

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10426987 **Workorder Name:** 1497 UPRR_Freeman **Owner Received Date:** 4/11/2018 **Results Requested By:** 4/25/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	Marlow-GW-041018	PS	4/10/2018 10:50	10426987001	Water	1	X	
2	Randall-GW-041018	PS	4/10/2018 09:00	10426987002	Water	1	X	
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] PACE	4/12/18 1020			0820
2	Fed Ex	4-13-18 0820	[signature] Pace	4-13-18	
3					

Cooler Temperature on Receipt 1.0 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

WO# : 2074491

PM: CMM Due Date: 04/25/18
CLIENT: PASI-MINN

Pace Analytical

Sample Condition Upon Re

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 04-13-18 AB

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☐ Yes ☒ No ☐ N/A	1
Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☒ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	5
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☒ N/A	9
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	14
Trip Blank Present:	☐ Yes ☒ No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 15, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10430481

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical
www.pacelabs.com

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10430481001	**Drum-A**	Water	05/08/18 11:00	05/09/18 09:30
10430481002	**Drum-B**	Water	05/08/18 11:10	05/09/18 09:30
10430481003	**Drum-C**	Water	05/08/18 11:20	05/09/18 09:30
10430481004	**Drum-D**	Water	05/08/18 11:30	05/09/18 09:30
10430481005	**Trip Blank**	Water	05/08/18 00:00	05/09/18 09:30

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SAMPLE ANALYTE COUNT

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10430481001	**Drum-A**	EPA 6010D	DM	7	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
10430481002	**Drum-B**	EPA 6010D	DM	7	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
10430481003	**Drum-C**	EPA 6010D	DM	7	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
10430481004	**Drum-D**	EPA 6010D	DM	7	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
10430481005	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10430481001	**Drum-A**					
EPA 6010D	Barium	55.1	ug/L	10.0	05/11/18 10:23	
10430481002	**Drum-B**					
EPA 6010D	Barium	20.8	ug/L	10.0	05/11/18 10:37	
EPA 8260B	Carbon disulfide	0.47J	ug/L	1.0	05/15/18 06:04	
EPA 8260B	Carbon tetrachloride	6.0	ug/L	0.50	05/15/18 06:04	
EPA 8260B	Chloroform	3.4	ug/L	1.0	05/15/18 06:04	
10430481003	**Drum-C**					
EPA 6010D	Barium	74.9	ug/L	10.0	05/11/18 10:40	
EPA 8260B	Carbon tetrachloride	0.55	ug/L	0.50	05/15/18 06:28	
10430481004	**Drum-D**					
EPA 6010D	Barium	273	ug/L	10.0	05/11/18 10:43	
EPA 6010D	Chromium	2.2J	ug/L	10.0	05/11/18 10:43	
EPA 8260B	Carbon tetrachloride	1.6	ug/L	0.50	05/15/18 06:52	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Method: **EPA 6010D**
Description: 6010D MET ICP
Client: UPRR_CH2M/Jacobs
Date: May 15, 2018

General Information:
4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Method: **EPA 7470A**
Description: 7470A Mercury
Client: UPRR_CH2M/Jacobs
Date: May 15, 2018

General Information:
4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10430481

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: May 15, 2018

General Information:
5 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-A **Lab ID: 10430481001** Collected: 05/08/18 11:00 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Arsenic	**<5.2**	ug/L	20.0	5.2	1	05/11/18 07:57	05/11/18 10:23	7440-38-2	
Barium	**55.1**	ug/L	10.0	0.22	1	05/11/18 07:57	05/11/18 10:23	7440-39-3	
Cadmium	**<0.46**	ug/L	3.0	0.46	1	05/11/18 07:57	05/11/18 10:23	7440-43-9	
Chromium	**<0.50**	ug/L	10.0	0.50	1	05/11/18 07:57	05/11/18 10:23	7440-47-3	
Lead	**<3.0**	ug/L	10.0	3.0	1	05/11/18 07:57	05/11/18 10:23	7439-92-1	
Selenium	**<6.4**	ug/L	20.0	6.4	1	05/11/18 07:57	05/11/18 10:23	7782-49-2	
Silver	**<0.27**	ug/L	10.0	0.27	1	05/11/18 07:57	05/11/18 10:23	7440-22-4	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.062**	ug/L	0.20	0.062	1	05/10/18 13:51	05/10/18 20:29	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 05:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		05/15/18 05:40	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		05/15/18 05:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		05/15/18 05:40	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 05:40	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 05:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		05/15/18 05:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 05:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		05/15/18 05:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		05/15/18 05:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		05/15/18 05:40	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 05:40	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 05:40	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		05/15/18 05:40	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		05/15/18 05:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 05:40	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 05:40	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		05/15/18 05:40	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		05/15/18 05:40	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		05/15/18 05:40	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		05/15/18 05:40	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		05/15/18 05:40	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 05:40	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		05/15/18 05:40	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		05/15/18 05:40	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		05/15/18 05:40	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		05/15/18 05:40	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		05/15/18 05:40	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	71-43-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-A **Lab ID: 10430481001** Collected: 05/08/18 11:00 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 05:40	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 05:40	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		05/15/18 05:40	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		05/15/18 05:40	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		05/15/18 05:40	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		05/15/18 05:40	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		05/15/18 05:40	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		05/15/18 05:40	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		05/15/18 05:40	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		05/15/18 05:40	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		05/15/18 05:40	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		05/15/18 05:40	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 05:40	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		05/15/18 05:40	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		05/15/18 05:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		05/15/18 05:40	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		05/15/18 05:40	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 05:40	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		05/15/18 05:40	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		05/15/18 05:40	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		05/15/18 05:40	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		05/15/18 05:40	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		05/15/18 05:40	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		05/15/18 05:40	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 05:40	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		05/15/18 05:40	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		05/15/18 05:40	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 05:40	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 05:40	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		05/15/18 05:40	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 05:40	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		05/15/18 05:40	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		05/15/18 05:40	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		05/15/18 05:40	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 05:40	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 05:40	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		05/15/18 05:40	110-57-6	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-A **Lab ID: 10430481001** Collected: 05/08/18 11:00 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		05/15/18 05:40	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		05/15/18 05:40	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/15/18 05:40	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-B **Lab ID: 10430481002** Collected: 05/08/18 11:10 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Arsenic	**<5.2**	ug/L	20.0	5.2	1	05/11/18 07:57	05/11/18 10:37	7440-38-2	
Barium	**20.8**	ug/L	10.0	0.22	1	05/11/18 07:57	05/11/18 10:37	7440-39-3	
Cadmium	**<0.46**	ug/L	3.0	0.46	1	05/11/18 07:57	05/11/18 10:37	7440-43-9	
Chromium	**<0.50**	ug/L	10.0	0.50	1	05/11/18 07:57	05/11/18 10:37	7440-47-3	
Lead	**<3.0**	ug/L	10.0	3.0	1	05/11/18 07:57	05/11/18 10:37	7439-92-1	
Selenium	**<6.4**	ug/L	20.0	6.4	1	05/11/18 07:57	05/11/18 10:37	7782-49-2	
Silver	**<0.27**	ug/L	10.0	0.27	1	05/11/18 07:57	05/11/18 10:37	7440-22-4	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.062**	ug/L	0.20	0.062	1	05/10/18 13:51	05/10/18 20:31	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:04	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		05/15/18 06:04	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		05/15/18 06:04	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		05/15/18 06:04	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:04	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:04	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		05/15/18 06:04	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:04	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		05/15/18 06:04	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:04	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:04	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:04	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:04	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		05/15/18 06:04	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		05/15/18 06:04	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:04	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:04	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		05/15/18 06:04	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		05/15/18 06:04	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		05/15/18 06:04	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		05/15/18 06:04	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		05/15/18 06:04	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:04	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		05/15/18 06:04	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		05/15/18 06:04	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		05/15/18 06:04	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		05/15/18 06:04	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		05/15/18 06:04	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	71-43-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-B **Lab ID: 10430481002** Collected: 05/08/18 11:10 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:04	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:04	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:04	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:04	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		05/15/18 06:04	74-83-9	
Carbon disulfide	**0.47J**	ug/L	1.0	0.37	1		05/15/18 06:04	75-15-0	
Carbon tetrachloride	**6.0**	ug/L	0.50	0.20	1		05/15/18 06:04	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		05/15/18 06:04	75-00-3	
Chloroform	**3.4**	ug/L	1.0	0.46	1		05/15/18 06:04	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		05/15/18 06:04	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		05/15/18 06:04	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		05/15/18 06:04	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:04	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:04	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		05/15/18 06:04	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		05/15/18 06:04	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		05/15/18 06:04	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:04	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		05/15/18 06:04	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:04	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		05/15/18 06:04	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		05/15/18 06:04	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		05/15/18 06:04	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		05/15/18 06:04	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:04	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:04	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		05/15/18 06:04	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:04	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:04	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		05/15/18 06:04	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:04	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:04	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		05/15/18 06:04	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:04	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:04	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:04	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		05/15/18 06:04	110-57-6	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-B **Lab ID: 10430481002** Collected: 05/08/18 11:10 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		05/15/18 06:04	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		05/15/18 06:04	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1		05/15/18 06:04	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-C **Lab ID: 10430481003** Collected: 05/08/18 11:20 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Arsenic	**<5.2**	ug/L	20.0	5.2	1	05/11/18 07:57	05/11/18 10:40	7440-38-2	
Barium	**74.9**	ug/L	10.0	0.22	1	05/11/18 07:57	05/11/18 10:40	7440-39-3	
Cadmium	**<0.46**	ug/L	3.0	0.46	1	05/11/18 07:57	05/11/18 10:40	7440-43-9	
Chromium	**<0.50**	ug/L	10.0	0.50	1	05/11/18 07:57	05/11/18 10:40	7440-47-3	
Lead	**<3.0**	ug/L	10.0	3.0	1	05/11/18 07:57	05/11/18 10:40	7439-92-1	
Selenium	**<6.4**	ug/L	20.0	6.4	1	05/11/18 07:57	05/11/18 10:40	7782-49-2	
Silver	**<0.27**	ug/L	10.0	0.27	1	05/11/18 07:57	05/11/18 10:40	7440-22-4	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.062**	ug/L	0.20	0.062	1	05/10/18 13:51	05/10/18 20:37	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:28	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		05/15/18 06:28	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		05/15/18 06:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		05/15/18 06:28	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:28	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:28	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		05/15/18 06:28	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:28	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		05/15/18 06:28	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:28	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:28	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:28	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:28	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		05/15/18 06:28	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		05/15/18 06:28	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:28	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:28	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		05/15/18 06:28	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		05/15/18 06:28	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		05/15/18 06:28	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		05/15/18 06:28	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		05/15/18 06:28	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:28	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		05/15/18 06:28	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		05/15/18 06:28	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		05/15/18 06:28	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		05/15/18 06:28	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		05/15/18 06:28	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	71-43-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-C **Lab ID: 10430481003** Collected: 05/08/18 11:20 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:28	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:28	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:28	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:28	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		05/15/18 06:28	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		05/15/18 06:28	75-15-0	
Carbon tetrachloride	**0.55**	ug/L	0.50	0.20	1		05/15/18 06:28	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		05/15/18 06:28	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		05/15/18 06:28	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		05/15/18 06:28	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		05/15/18 06:28	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		05/15/18 06:28	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:28	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:28	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		05/15/18 06:28	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		05/15/18 06:28	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		05/15/18 06:28	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:28	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		05/15/18 06:28	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:28	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		05/15/18 06:28	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		05/15/18 06:28	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		05/15/18 06:28	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		05/15/18 06:28	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:28	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:28	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		05/15/18 06:28	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:28	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:28	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		05/15/18 06:28	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:28	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:28	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		05/15/18 06:28	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:28	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:28	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:28	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		05/15/18 06:28	110-57-6	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-C **Lab ID: 10430481003** Collected: 05/08/18 11:20 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		05/15/18 06:28	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		05/15/18 06:28	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/15/18 06:28	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-D **Lab ID: 10430481004** Collected: 05/08/18 11:30 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Arsenic	**<5.2**	ug/L	20.0	5.2	1	05/11/18 07:57	05/11/18 10:43	7440-38-2	
Barium	**273**	ug/L	10.0	0.22	1	05/11/18 07:57	05/11/18 10:43	7440-39-3	
Cadmium	**<0.46**	ug/L	3.0	0.46	1	05/11/18 07:57	05/11/18 10:43	7440-43-9	
Chromium	**2.2J**	ug/L	10.0	0.50	1	05/11/18 07:57	05/11/18 10:43	7440-47-3	
Lead	**<3.0**	ug/L	10.0	3.0	1	05/11/18 07:57	05/11/18 10:43	7439-92-1	
Selenium	**<6.4**	ug/L	20.0	6.4	1	05/11/18 07:57	05/11/18 10:43	7782-49-2	
Silver	**<0.27**	ug/L	10.0	0.27	1	05/11/18 07:57	05/11/18 10:43	7440-22-4	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.062**	ug/L	0.20	0.062	1	05/10/18 13:51	05/10/18 20:39	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		05/15/18 06:52	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		05/15/18 06:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		05/15/18 06:52	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:52	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		05/15/18 06:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		05/15/18 06:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:52	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:52	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		05/15/18 06:52	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		05/15/18 06:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 06:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:52	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		05/15/18 06:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		05/15/18 06:52	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		05/15/18 06:52	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		05/15/18 06:52	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		05/15/18 06:52	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:52	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		05/15/18 06:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		05/15/18 06:52	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		05/15/18 06:52	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		05/15/18 06:52	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		05/15/18 06:52	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	71-43-2	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-D **Lab ID: 10430481004** Collected: 05/08/18 11:30 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:52	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:52	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:52	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		05/15/18 06:52	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		05/15/18 06:52	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		05/15/18 06:52	75-15-0	
Carbon tetrachloride	**1.6**	ug/L	0.50	0.20	1		05/15/18 06:52	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		05/15/18 06:52	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		05/15/18 06:52	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		05/15/18 06:52	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	124-48-1	
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		05/15/18 06:52	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		05/15/18 06:52	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 06:52	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:52	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		05/15/18 06:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		05/15/18 06:52	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		05/15/18 06:52	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 06:52	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		05/15/18 06:52	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		05/15/18 06:52	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		05/15/18 06:52	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		05/15/18 06:52	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		05/15/18 06:52	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		05/15/18 06:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 06:52	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		05/15/18 06:52	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		05/15/18 06:52	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 06:52	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:52	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		05/15/18 06:52	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:52	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		05/15/18 06:52	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		05/15/18 06:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		05/15/18 06:52	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 06:52	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 06:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		05/15/18 06:52	110-57-6	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Drum-D **Lab ID: 10430481004** Collected: 05/08/18 11:30 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		05/15/18 06:52	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		05/15/18 06:52	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/15/18 06:52	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Sample: Trip Blank **Lab ID: 10430481005** Collected: 05/08/18 00:00 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	630-20-6	
1,1,1-Trichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 02:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.19**	ug/L	0.50	0.19	1		05/15/18 02:54	79-34-5	
1,1,2-Trichloroethane	**<0.22**	ug/L	0.50	0.22	1		05/15/18 02:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.28**	ug/L	1.0	0.28	1		05/15/18 02:54	76-13-1	
1,1-Dichloroethane	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	75-34-3	
1,1-Dichloroethene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 02:54	75-35-4	
1,1-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 02:54	563-58-6	
1,2,3-Trichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	87-61-6	
1,2,3-Trichloropropane	**<0.66**	ug/L	4.0	0.66	1		05/15/18 02:54	96-18-4	
1,2,4-Trichlorobenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 02:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.098**	ug/L	0.50	0.098	1		05/15/18 02:54	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	4.0	1.0	1		05/15/18 02:54	96-12-8	
1,2-Dibromoethane (EDB)	**<0.17**	ug/L	0.50	0.17	1		05/15/18 02:54	106-93-4	
1,2-Dichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 02:54	95-50-1	
1,2-Dichloroethane	**<0.15**	ug/L	0.50	0.15	1		05/15/18 02:54	107-06-2	
1,2-Dichloroethene (Total)	**<0.41**	ug/L	1.0	0.41	1		05/15/18 02:54	540-59-0	
1,2-Dichloropropane	**<0.62**	ug/L	4.0	0.62	1		05/15/18 02:54	78-87-5	
1,3,5-Trimethylbenzene	**<0.18**	ug/L	0.50	0.18	1		05/15/18 02:54	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 02:54	541-73-1	
1,3-Dichloropropane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	142-28-9	
1,4-Dichlorobenzene	**<0.10**	ug/L	0.50	0.10	1		05/15/18 02:54	106-46-7	
1,4-Dioxane (p-Dioxane)	**<22.6**	ug/L	200	22.6	1		05/15/18 02:54	123-91-1	
2,2,4-Trimethylpentane	**<1.3**	ug/L	4.0	1.3	1		05/15/18 02:54	540-84-1	
2,2-Dichloropropane	**<0.40**	ug/L	1.0	0.40	1		05/15/18 02:54	594-20-7	
2-Butanone (MEK)	**<2.4**	ug/L	5.0	2.4	1		05/15/18 02:54	78-93-3	
2-Chlorotoluene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 02:54	95-49-8	
2-Hexanone	**<2.5**	ug/L	5.0	2.5	1		05/15/18 02:54	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.55**	ug/L	5.0	0.55	1		05/15/18 02:54	108-10-1	
Acetone	**<8.8**	ug/L	20.0	8.8	1		05/15/18 02:54	67-64-1	
Acrolein	**<4.8**	ug/L	10.0	4.8	1		05/15/18 02:54	107-02-8	
Acrylonitrile	**<4.9**	ug/L	10.0	4.9	1		05/15/18 02:54	107-13-1	
Benzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	71-43-2	
Bromobenzene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 02:54	108-86-1	
Bromochloromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 02:54	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	0.50	0.20	1		05/15/18 02:54	75-27-4	
Bromoform	**<1.0**	ug/L	4.0	1.0	1		05/15/18 02:54	75-25-2	
Bromomethane	**<1.5**	ug/L	4.0	1.5	1		05/15/18 02:54	74-83-9	
Carbon disulfide	**<0.37**	ug/L	1.0	0.37	1		05/15/18 02:54	75-15-0	
Carbon tetrachloride	**<0.20**	ug/L	0.50	0.20	1		05/15/18 02:54	56-23-5	
Chlorobenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	108-90-7	
Chloroethane	**<0.44**	ug/L	1.0	0.44	1		05/15/18 02:54	75-00-3	
Chloroform	**<0.46**	ug/L	1.0	0.46	1		05/15/18 02:54	67-66-3	
Chloromethane	**<1.1**	ug/L	4.0	1.1	1		05/15/18 02:54	74-87-3	
Dibromochloromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease

Pace Project No.: 10430481

Sample: Trip Blank **Lab ID: 10430481005** Collected: 05/08/18 00:00 Received: 05/09/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.50**	ug/L	1.0	0.50	1		05/15/18 02:54	74-95-3	
Dichlorodifluoromethane	**<0.31**	ug/L	1.0	0.31	1		05/15/18 02:54	75-71-8	
Dichlorofluoromethane	**<0.38**	ug/L	1.0	0.38	1		05/15/18 02:54	75-43-4	
Diisopropyl ether	**<0.12**	ug/L	1.0	0.12	1		05/15/18 02:54	108-20-3	
Ethyl-tert-butyl ether	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	100-41-4	
Hexachloro-1,3-butadiene	**<0.48**	ug/L	1.0	0.48	1		05/15/18 02:54	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	98-82-8	
Methyl-tert-butyl ether	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	1634-04-4	
Methylene Chloride	**<1.2**	ug/L	4.0	1.2	1		05/15/18 02:54	75-09-2	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		05/15/18 02:54	91-20-3	
Styrene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	0.50	0.16	1		05/15/18 02:54	127-18-4	
Tetrahydrofuran	**<4.3**	ug/L	10.0	4.3	1		05/15/18 02:54	109-99-9	
Toluene	**<0.17**	ug/L	0.50	0.17	1		05/15/18 02:54	108-88-3	
Trichloroethene	**<0.18**	ug/L	0.40	0.18	1		05/15/18 02:54	79-01-6	
Trichlorofluoromethane	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	75-69-4	
Vinyl acetate	**<1.5**	ug/L	10.0	1.5	1		05/15/18 02:54	108-05-4	
Vinyl chloride	**<0.096**	ug/L	0.20	0.096	1		05/15/18 02:54	75-01-4	
Xylene (Total)	**<0.24**	ug/L	1.5	0.24	1		05/15/18 02:54	1330-20-7	
cis-1,2-Dichloroethene	**<0.20**	ug/L	0.50	0.20	1		05/15/18 02:54	156-59-2	
cis-1,3-Dichloropropene	**<0.12**	ug/L	1.0	0.12	1		05/15/18 02:54	10061-01-5	
m&p-Xylene	**<0.24**	ug/L	1.0	0.24	1		05/15/18 02:54	179601-23-1	
n-Butylbenzene	**<0.13**	ug/L	0.50	0.13	1		05/15/18 02:54	104-51-8	
n-Propylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 02:54	103-65-1	
o-Xylene	**<0.11**	ug/L	0.50	0.11	1		05/15/18 02:54	95-47-6	
p-Isopropyltoluene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	99-87-6	
sec-Butylbenzene	**<0.12**	ug/L	0.50	0.12	1		05/15/18 02:54	135-98-8	
tert-Amylmethyl ether	**<0.12**	ug/L	0.50	0.12	1		05/15/18 02:54	994-05-8	
tert-Butyl Alcohol	**<2.2**	ug/L	10.0	2.2	1		05/15/18 02:54	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		05/15/18 02:54	98-06-6	
trans-1,2-Dichloroethene	**<0.21**	ug/L	0.50	0.21	1		05/15/18 02:54	156-60-5	
trans-1,3-Dichloropropene	**<0.14**	ug/L	0.50	0.14	1		05/15/18 02:54	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.8**	ug/L	10.0	2.8	1		05/15/18 02:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		05/15/18 02:54	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		05/15/18 02:54	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/15/18 02:54	460-00-4	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

QC Batch: 537366 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004

METHOD BLANK: 2921149 Matrix: Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.062	0.20	0.062	05/10/18 20:17	

LABORATORY CONTROL SAMPLE: 2921150

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.3	85	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921151 2921152

Parameter	Units	10430141002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.00084 mg/L	5	5	6.0	6.4	104	112	80-120	6	20	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

QC Batch: 537358 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004

METHOD BLANK: 2921117 Matrix: Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<5.2	20.0	5.2	05/11/18 09:50	
Barium	ug/L	<0.22	10.0	0.22	05/11/18 09:50	
Cadmium	ug/L	<0.46	3.0	0.46	05/11/18 09:50	
Chromium	ug/L	<0.50	10.0	0.50	05/11/18 09:50	
Lead	ug/L	<3.0	10.0	3.0	05/11/18 09:50	
Selenium	ug/L	<6.4	20.0	6.4	05/11/18 09:50	
Silver	ug/L	<0.27	10.0	0.27	05/11/18 09:50	

LABORATORY CONTROL SAMPLE: 2921118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	1040	104	80-120	
Barium	ug/L	1000	1060	106	80-120	
Cadmium	ug/L	1000	1050	105	80-120	
Chromium	ug/L	1000	1040	104	80-120	
Lead	ug/L	1000	1060	106	80-120	
Selenium	ug/L	1000	1110	111	80-120	
Silver	ug/L	500	515	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921119 2921120

Parameter	Units	10430481001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	<5.2	1000	1000	1050	1060	105	106	75-125	1	20	
Barium	ug/L	55.1	1000	1000	1110	1120	106	106	75-125	0	20	
Cadmium	ug/L	<0.46	1000	1000	1050	1060	105	106	75-125	1	20	
Chromium	ug/L	<0.50	1000	1000	1030	1040	103	104	75-125	1	20	
Lead	ug/L	<3.0	1000	1000	1040	1050	104	104	75-125	1	20	
Selenium	ug/L	<6.4	1000	1000	1090	1100	109	110	75-125	1	20	
Silver	ug/L	<0.27	500	500	515	519	103	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

QC Batch: 538166 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004, 10430481005

METHOD BLANK: 2926050 Matrix: Water
Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004, 10430481005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
1,1,1-Trichloroethane	ug/L	<0.15	0.50	0.15	05/15/18 00:08	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.50	0.19	05/15/18 00:08	
1,1,2-Trichloroethane	ug/L	<0.22	0.50	0.22	05/15/18 00:08	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.28	1.0	0.28	05/15/18 00:08	
1,1-Dichloroethane	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
1,1-Dichloroethene	ug/L	<0.18	0.50	0.18	05/15/18 00:08	
1,1-Dichloropropene	ug/L	<0.18	0.50	0.18	05/15/18 00:08	
1,2,3-Trichlorobenzene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
1,2,3-Trichloropropane	ug/L	<0.66	4.0	0.66	05/15/18 00:08	
1,2,4-Trichlorobenzene	ug/L	<0.18	0.50	0.18	05/15/18 00:08	
1,2,4-Trimethylbenzene	ug/L	<0.098	0.50	0.098	05/15/18 00:08	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	4.0	1.0	05/15/18 00:08	
1,2-Dibromoethane (EDB)	ug/L	<0.17	0.50	0.17	05/15/18 00:08	
1,2-Dichlorobenzene	ug/L	<0.21	0.50	0.21	05/15/18 00:08	
1,2-Dichloroethane	ug/L	<0.15	0.50	0.15	05/15/18 00:08	
1,2-Dichloroethene (Total)	ug/L	<0.41	1.0	0.41	05/15/18 00:08	
1,2-Dichloropropane	ug/L	<0.62	4.0	0.62	05/15/18 00:08	
1,3,5-Trimethylbenzene	ug/L	<0.18	0.50	0.18	05/15/18 00:08	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/15/18 00:08	
1,3-Dichloropropane	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
1,4-Dichlorobenzene	ug/L	<0.10	0.50	0.10	05/15/18 00:08	
1,4-Dioxane (p-Dioxane)	ug/L	<22.6	200	22.6	05/15/18 00:08	
2,2,4-Trimethylpentane	ug/L	<1.3	4.0	1.3	05/15/18 00:08	
2,2-Dichloropropane	ug/L	<0.40	1.0	0.40	05/15/18 00:08	
2-Butanone (MEK)	ug/L	<2.4	5.0	2.4	05/15/18 00:08	
2-Chlorotoluene	ug/L	<0.20	0.50	0.20	05/15/18 00:08	
2-Hexanone	ug/L	<2.5	5.0	2.5	05/15/18 00:08	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.55	5.0	0.55	05/15/18 00:08	
Acetone	ug/L	<8.8	20.0	8.8	05/15/18 00:08	
Acrolein	ug/L	<4.8	10.0	4.8	05/15/18 00:08	
Acrylonitrile	ug/L	<4.9	10.0	4.9	05/15/18 00:08	
Benzene	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
Bromobenzene	ug/L	<0.16	0.50	0.16	05/15/18 00:08	
Bromochloromethane	ug/L	<0.38	1.0	0.38	05/15/18 00:08	
Bromodichloromethane	ug/L	<0.20	0.50	0.20	05/15/18 00:08	
Bromoform	ug/L	<1.0	4.0	1.0	05/15/18 00:08	
Bromomethane	ug/L	<1.5	4.0	1.5	05/15/18 00:08	
Carbon disulfide	ug/L	<0.37	1.0	0.37	05/15/18 00:08	
Carbon tetrachloride	ug/L	<0.20	0.50	0.20	05/15/18 00:08	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

METHOD BLANK: 2926050 Matrix: Water

Associated Lab Samples: 10430481001, 10430481002, 10430481003, 10430481004, 10430481005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
Chloroethane	ug/L	<0.44	1.0	0.44	05/15/18 00:08	
Chloroform	ug/L	<0.46	1.0	0.46	05/15/18 00:08	
Chloromethane	ug/L	<1.1	4.0	1.1	05/15/18 00:08	
cis-1,2-Dichloroethene	ug/L	<0.20	0.50	0.20	05/15/18 00:08	
cis-1,3-Dichloropropene	ug/L	<0.12	1.0	0.12	05/15/18 00:08	MN
Dibromochloromethane	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
Dibromomethane	ug/L	<0.50	1.0	0.50	05/15/18 00:08	
Dichlorodifluoromethane	ug/L	<0.31	1.0	0.31	05/15/18 00:08	
Dichlorofluoromethane	ug/L	<0.38	1.0	0.38	05/15/18 00:08	
Diisopropyl ether	ug/L	<0.12	1.0	0.12	05/15/18 00:08	
Ethyl-tert-butyl ether	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
Hexachloro-1,3-butadiene	ug/L	<0.48	1.0	0.48	05/15/18 00:08	
Isopropylbenzene (Cumene)	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
m&p-Xylene	ug/L	<0.24	1.0	0.24	05/15/18 00:08	
Methyl-tert-butyl ether	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
Methylene Chloride	ug/L	<1.2	4.0	1.2	05/15/18 00:08	
n-Butylbenzene	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
n-Propylbenzene	ug/L	<0.12	0.50	0.12	05/15/18 00:08	
Naphthalene	ug/L	<0.42	1.0	0.42	05/15/18 00:08	
o-Xylene	ug/L	<0.11	0.50	0.11	05/15/18 00:08	
p-Isopropyltoluene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
sec-Butylbenzene	ug/L	<0.12	0.50	0.12	05/15/18 00:08	
Styrene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
tert-Amylmethyl ether	ug/L	<0.12	0.50	0.12	05/15/18 00:08	
tert-Butyl Alcohol	ug/L	<2.2	10.0	2.2	05/15/18 00:08	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/15/18 00:08	
Tetrachloroethene	ug/L	<0.16	0.50	0.16	05/15/18 00:08	
Tetrahydrofuran	ug/L	<4.3	10.0	4.3	05/15/18 00:08	
Toluene	ug/L	<0.17	0.50	0.17	05/15/18 00:08	
trans-1,2-Dichloroethene	ug/L	<0.21	0.50	0.21	05/15/18 00:08	
trans-1,3-Dichloropropene	ug/L	<0.14	0.50	0.14	05/15/18 00:08	
trans-1,4-Dichloro-2-butene	ug/L	<2.8	10.0	2.8	05/15/18 00:08	
Trichloroethene	ug/L	<0.18	0.40	0.18	05/15/18 00:08	
Trichlorofluoromethane	ug/L	<0.13	0.50	0.13	05/15/18 00:08	
Vinyl acetate	ug/L	<1.5	10.0	1.5	05/15/18 00:08	
Vinyl chloride	ug/L	<0.096	0.20	0.096	05/15/18 00:08	
Xylene (Total)	ug/L	<0.24	1.5	0.24	05/15/18 00:08	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		05/15/18 00:08	
4-Bromofluorobenzene (S)	%.	103	75-125		05/15/18 00:08	
Toluene-d8 (S)	%.	98	75-125		05/15/18 00:08	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

LABORATORY CONTROL SAMPLE: 2926051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.3	106	75-125	
1,1,1-Trichloroethane	ug/L	20	22.3	112	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.4	107	75-125	
1,1,2-Trichloroethane	ug/L	20	22.1	110	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.1	106	72-125	
1,1-Dichloroethane	ug/L	20	23.3	117	75-125	
1,1-Dichloroethene	ug/L	20	21.1	106	73-125	
1,1-Dichloropropene	ug/L	20	22.3	111	73-125	
1,2,3-Trichlorobenzene	ug/L	20	18.8	94	72-130	
1,2,3-Trichloropropane	ug/L	20	20.6	103	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.9	99	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	43.7	87	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	22.1	111	75-125	
1,2-Dichlorobenzene	ug/L	20	20.7	103	75-125	
1,2-Dichloroethane	ug/L	20	21.6	108	75-125	
1,2-Dichloroethene (Total)	ug/L	40	43.1	108	75-125	
1,2-Dichloropropane	ug/L	20	21.3	107	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.2	106	75-125	
1,3-Dichlorobenzene	ug/L	20	20.7	103	75-125	
1,3-Dichloropropane	ug/L	20	22.3	111	75-125	
1,4-Dichlorobenzene	ug/L	20	20.5	102	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	397	99	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.7	98	64-130	
2,2-Dichloropropane	ug/L	20	21.0	105	68-129	
2-Butanone (MEK)	ug/L	100	111	111	65-126	
2-Chlorotoluene	ug/L	20	20.6	103	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	22.0	110	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	115	115	75-131	
Acetone	ug/L	100	112	112	68-150	
Acrolein	ug/L	200	218	109	63-149	
Acrylonitrile	ug/L	200	226	113	75-125	
Benzene	ug/L	20	21.9	109	75-125	
Bromobenzene	ug/L	20	21.4	107	75-125	
Bromochloromethane	ug/L	20	22.1	111	75-125	
Bromodichloromethane	ug/L	20	20.2	101	75-125	
Bromoform	ug/L	20	18.6	93	70-125	
Bromomethane	ug/L	20	20.6	103	30-145	
Carbon disulfide	ug/L	20	19.4	97	67-125	
Carbon tetrachloride	ug/L	20	21.0	105	75-125	
Chlorobenzene	ug/L	20	20.2	101	75-125	
Chloroethane	ug/L	20	22.8	114	73-131	
Chloroform	ug/L	20	20.3	101	75-125	
Chloromethane	ug/L	20	19.2	96	52-132	
cis-1,2-Dichloroethene	ug/L	20	22.0	110	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.9	99	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

LABORATORY CONTROL SAMPLE: 2926051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.2	96	75-125	
Dibromomethane	ug/L	20	20.1	101	75-125	
Dichlorodifluoromethane	ug/L	20	18.0	90	64-127	
Dichlorofluoromethane	ug/L	20	22.2	111	75-125	
Diisopropyl ether	ug/L	20	22.9	114	75-125	
Ethyl-tert-butyl ether	ug/L	20	22.6	113	75-125	
Ethylbenzene	ug/L	20	21.0	105	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.3	97	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.1	95	75-125	
m&p-Xylene	ug/L	40	39.5	99	75-125	
Methyl-tert-butyl ether	ug/L	20	21.9	110	75-125	
Methylene Chloride	ug/L	20	21.0	105	72-125	
n-Butylbenzene	ug/L	20	18.9	95	75-125	
n-Propylbenzene	ug/L	20	20.5	103	75-125	
Naphthalene	ug/L	20	17.1	86	61-136	
o-Xylene	ug/L	20	19.5	97	75-125	
p-Isopropyltoluene	ug/L	20	19.5	98	75-125	
sec-Butylbenzene	ug/L	20	20.0	100	75-125	
Styrene	ug/L	20	19.5	97	75-125	
tert-Amylmethyl ether	ug/L	20	21.3	106	75-125	
tert-Butyl Alcohol	ug/L	200	225	112	75-125	
tert-Butylbenzene	ug/L	20	20.9	104	75-125	
Tetrachloroethene	ug/L	20	19.2	96	75-125	
Tetrahydrofuran	ug/L	200	212	106	64-150	
Toluene	ug/L	20	19.8	99	75-125	
trans-1,2-Dichloroethene	ug/L	20	21.1	106	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.6	99	57-126	
Trichloroethene	ug/L	20	21.6	108	75-125	
Trichlorofluoromethane	ug/L	20	21.8	109	74-126	
Vinyl acetate	ug/L	20	22.8	114	72-129	
Vinyl chloride	ug/L	20	20.1	100	71-130	
Xylene (Total)	ug/L	60	59.0	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			103	75-125	
4-Bromofluorobenzene (S)	%.			102	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926053 2926054

Parameter	Units	10430373001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	21.3	21.5	106	108	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	23.3	23.4	116	117	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	20.4	20.5	102	103	75-125	1	30	
1,1,2-Trichloroethane	ug/L	<0.50	20	20	21.1	20.9	106	105	75-125	1	30	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926053 2926054

Parameter	Units	10430373001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	22.0	23.0	110	115	75-136	4	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	23.4	24.1	117	121	75-125	3	30	
1,1-Dichloroethene	ug/L	<0.50	20	20	22.4	23.1	112	116	75-127	3	30	
1,1-Dichloropropene	ug/L	<0.50	20	20	22.8	23.7	114	119	75-129	4	30	
1,2,3-Trichlorobenzene	ug/L	<0.50	20	20	19.8	19.6	99	98	72-137	1	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	19.2	19.6	96	98	75-125	2	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	19.4	19.2	97	96	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.50	20	20	20.1	20.1	101	100	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	50	50	43.5	42.3	87	85	61-127	3	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	20.9	21.2	105	106	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	20.7	20.8	103	104	75-125	1	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	20.8	21.4	104	107	69-125	2	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	44.2	45.0	110	112	75-125	2	30	
1,2-Dichloropropane	ug/L	<4.0	20	20	21.3	21.5	107	108	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.50	20	20	21.5	21.5	107	108	75-125	0	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	20.8	20.7	104	104	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	21.5	21.8	107	109	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	20.5	20.4	103	102	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	364	371	91	93	67-128	2	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	21.7	21.9	108	110	65-150	1	30	
2,2-Dichloropropane	ug/L	<1.0	20	20	21.9	22.2	110	111	65-136	1	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	99.5	101	100	101	59-125	1	30	
2-Chlorotoluene	ug/L	<0.50	20	20	20.9	20.4	104	102	73-126	2	30	
2-Hexanone	ug/L	<5.0	100	100	98.9	96.4	99	96	68-138	3	30	
4-Chlorotoluene	ug/L	<0.50	20	20	21.8	21.9	109	110	75-125	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	111	109	111	109	73-125	2	30	
Acetone	ug/L	<20.0	100	100	105	105	105	105	75-150	0	30	
Acrolein	ug/L	<10.0	200	200	211	214	105	107	53-150	1	30	
Acrylonitrile	ug/L	<10.0	200	200	213	215	107	108	69-127	1	30	
Benzene	ug/L	<0.50	20	20	21.9	22.3	109	112	74-125	2	30	
Bromobenzene	ug/L	<0.50	20	20	21.5	21.6	108	108	75-125	0	30	
Bromochloromethane	ug/L	<1.0	20	20	21.7	22.1	108	110	75-125	2	30	
Bromodichloromethane	ug/L	<0.50	20	20	20.0	20.3	100	102	75-125	1	30	
Bromoform	ug/L	<4.0	20	20	18.1	18.0	90	90	68-125	0	30	
Bromomethane	ug/L	<4.0	20	20	22.2	22.0	111	110	37-149	1	30	
Carbon disulfide	ug/L	<1.0	20	20	20.3	21.0	101	105	66-139	3	30	
Carbon tetrachloride	ug/L	<0.50	20	20	21.9	22.7	110	114	75-127	3	30	
Chlorobenzene	ug/L	<0.50	20	20	20.2	20.2	101	101	75-125	0	30	
Chloroethane	ug/L	<1.0	20	20	22.5	21.7	113	109	73-134	4	30	
Chloroform	ug/L	<1.0	20	20	20.8	21.3	100	102	71-125	3	30	
Chloromethane	ug/L	<4.0	20	20	20.0	18.3	100	92	58-133	9	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	22.0	22.4	110	112	75-125	2	30	
cis-1,3-Dichloropropene	ug/L	<1.0	20	20	18.6	18.8	93	94	71-125	1	30	
Dibromochloromethane	ug/L	<0.50	20	20	19.1	19.3	95	96	75-125	1	30	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926053 2926054

Parameter	Units	10430373001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	19.4	19.9	97	100	75-125	3	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	18.5	17.7	93	89	70-150	4	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	21.9	20.9	110	104	75-126	5	30	
Diisopropyl ether	ug/L	<1.0	20	20	22.4	23.6	112	118	66-131	5	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	21.8	22.4	109	112	74-125	2	30	
Ethylbenzene	ug/L	<0.50	20	20	21.2	21.7	106	108	75-125	2	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	23.0	22.8	115	114	60-150	1	30	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	20	19.8	20.0	99	100	75-125	1	30	
m&p-Xylene	ug/L	<1.0	40	40	40.1	40.5	100	101	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	21.1	21.8	106	109	75-125	3	30	
Methylene Chloride	ug/L	<4.0	20	20	20.3	21.0	101	105	72-125	4	30	
n-Butylbenzene	ug/L	<0.50	20	20	20.7	20.5	104	103	73-140	1	30	
n-Propylbenzene	ug/L	<0.50	20	20	21.2	21.1	106	106	75-126	0	30	
Naphthalene	ug/L	<1.0	20	20	18.0	17.8	90	89	61-136	1	30	
o-Xylene	ug/L	<0.50	20	20	18.9	19.5	94	97	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	20.1	19.6	101	98	73-133	3	30	
sec-Butylbenzene	ug/L	<0.50	20	20	21.0	20.6	105	103	75-132	2	30	
Styrene	ug/L	<0.50	20	20	19.5	20.0	98	100	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	20.3	21.0	101	105	71-125	4	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	201	206	100	103	72-130	3	30	
tert-Butylbenzene	ug/L	<0.50	20	20	21.7	21.8	109	109	75-126	0	30	
Tetrachloroethene	ug/L	<0.50	20	20	20.1	20.2	101	101	75-125	1	30	
Tetrahydrofuran	ug/L	<10.0	200	200	199	200	100	100	75-150	1	30	
Toluene	ug/L	<0.50	20	20	19.9	20.2	100	101	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	22.2	22.5	111	113	75-125	2	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	19.3	19.5	97	98	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50	50	47.1	46.5	94	93	57-125	1	30	
Trichloroethene	ug/L	3.0	20	20	25.0	25.0	110	110	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	22.5	21.5	112	107	75-135	5	30	
Vinyl acetate	ug/L	<10.0	20	20	21.2	21.1	106	105	57-136	1	30	
Vinyl chloride	ug/L	ND	20	20	20.9	19.9	104	100	74-141	5	30	
Xylene (Total)	ug/L	<1.5	60	60	58.9	60.0	98	100	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						105	105	75-125			
4-Bromofluorobenzene (S)	%.						102	102	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

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QUALIFIERS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10430481

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10430481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10430481001	**Drum-A**	EPA 3010	537358	EPA 6010D	537668
10430481002	**Drum-B**	EPA 3010	537358	EPA 6010D	537668
10430481003	**Drum-C**	EPA 3010	537358	EPA 6010D	537668
10430481004	**Drum-D**	EPA 3010	537358	EPA 6010D	537668
10430481001	**Drum-A**	EPA 7470A	537366	EPA 7470A	537567
10430481002	**Drum-B**	EPA 7470A	537366	EPA 7470A	537567
10430481003	**Drum-C**	EPA 7470A	537366	EPA 7470A	537567
10430481004	**Drum-D**	EPA 7470A	537366	EPA 7470A	537567
10430481001	**Drum-A**	EPA 8260B	538166		
10430481002	**Drum-B**	EPA 8260B	538166		
10430481003	**Drum-C**	EPA 8260B	538166		
10430481004	**Drum-D**	EPA 8260B	538166		
10430481005	**Trip Blank**	EPA 8260B	538166		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reques

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO# : 10430481

10430481

Section A Required Client Information:		Section B Required Project Information:	Section C Invoice Information:	
Company: UPRR		Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh (awalsh@up.com)	
Address: 1400 W. 52nd Ave. Denver, CO 80221		Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
		Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email: awalsh@up.com		Purchase Order #	Pace Quote: Contract# 758938	
Phone:	Fax:	Project Name: Freeman, WA - Cenex Harvest Lease	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: 10 Day		Project #:	Pace Profile #: 36447 / 5	WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	Total RCRA8 Metals	
1	Drum-A	WT	G	5/8	1100	—	—	—	~~3~~ 4			X	X				X	X	001
2	Drum-B	↓	↓	↓	1110	—	—	—	4			X	X				X	X	002
3	Drum-C	↓	↓	↓	1120	—	—	—	4			X	X				X	X	003
4	Drum-D	↓	↓	↓	1130	—	—	—	4			X	X				X	X	004
5	Trip Blank	↓	↓	—	—	—	—	—	2				X				X		005
6																			
7																			
8																			
9																			
10																			
11																			
12																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / Jacobs	5/8/18	1530	[signature] PACE	5/9/18	930	2.8	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 5/8/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #: WO#: 10430481

PM: JMG Due Date: 05/16/18
CLIENT: UPRR_CH2M

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9639 7649

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.8 **Cooler Temp Corrected (°C):** 2.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** TRUE **Date and Initials of Person Examining Contents:** HWF 5/9/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-4 : Y
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. IN ½ TRIP BLANKS
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 TRIP BLANKS
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 158227				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1422	Temp: 2.8	Corrected Temp: 2.8
Time: 1428	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 05/09/18

Note: Whenever there is a discrepancy affecting North Carolina compliance s will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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July 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437242

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437242001	**062518-W26**	Water	06/25/18 14:30	06/27/18 09:25
10437242002	**062518-Marlow2**	Water	06/25/18 15:30	06/27/18 09:25
10437242003	**062518-MW13S**	Water	06/25/18 16:30	06/27/18 09:25
10437242004	**062518-W20**	Water	06/25/18 17:30	06/27/18 09:25

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437242001	**062518-W26**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437242002	**062518-Marlow2**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437242003	**062518-MW13S**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437242004	**062518-W20**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	AR3	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437242001	**062518-W26**					
EPA 6010D	Barium, Dissolved	6.4J	ug/L	10.0	06/29/18 10:37	
EPA 6010D	Calcium, Dissolved	38700	ug/L	500	06/29/18 10:37	
EPA 6010D	Cobalt, Dissolved	0.55J	ug/L	10.0	06/29/18 10:37	
EPA 6010D	Magnesium, Dissolved	11100	ug/L	500	06/29/18 10:37	
EPA 6010D	Manganese, Dissolved	0.42J	ug/L	5.0	06/29/18 10:37	
EPA 6010D	Potassium, Dissolved	2210J	ug/L	2500	06/29/18 10:37	
EPA 6010D	Sodium, Dissolved	13400	ug/L	1000	06/29/18 10:37	
EPA 6010D	Vanadium, Dissolved	7.2J	ug/L	15.0	06/29/18 10:37	
EPA 6010D	Zinc, Dissolved	86.1	ug/L	20.0	06/29/18 10:37	
SM 2320B	Alkalinity, Total as CaCO3	151	mg/L	5.0	07/09/18 15:50	
SM 2540C	Total Dissolved Solids	215	mg/L	10.0	06/28/18 08:16	
EPA 300.0	Chloride	4.4	mg/L	1.2	06/27/18 12:59	
EPA 300.0	Nitrate as N	2.9	mg/L	0.10	06/27/18 12:59	
EPA 300.0	Sulfate	10.2	mg/L	1.2	06/27/18 12:59	
EPA 353.2	Nitrogen, NO2 plus NO3	2.7	mg/L	0.50	06/27/18 15:45	
SM 5310C	Total Organic Carbon	0.90J	mg/L	1.0	07/03/18 14:25	
10437242002	**062518-Marlow2**					
RSK 175	Methane	95.7	ug/L	10.0	06/28/18 09:06	
EPA 6010D	Aluminum, Dissolved	16.3J	ug/L	200	06/29/18 10:51	
EPA 6010D	Barium, Dissolved	22.1	ug/L	10.0	06/29/18 10:51	
EPA 6010D	Calcium, Dissolved	55800	ug/L	500	06/29/18 10:51	
EPA 6010D	Cobalt, Dissolved	0.51J	ug/L	10.0	06/29/18 10:51	
EPA 6010D	Copper, Dissolved	1.3J	ug/L	10.0	06/29/18 10:51	
EPA 6010D	Iron, Dissolved	2100	ug/L	50.0	06/29/18 10:51	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	06/29/18 10:51	
EPA 6010D	Magnesium, Dissolved	15600	ug/L	500	06/29/18 10:51	
EPA 6010D	Manganese, Dissolved	125	ug/L	5.0	06/29/18 10:51	
EPA 6010D	Potassium, Dissolved	621J	ug/L	2500	06/29/18 10:51	
EPA 6010D	Sodium, Dissolved	15300	ug/L	1000	06/29/18 10:51	
EPA 6010D	Vanadium, Dissolved	3.2J	ug/L	15.0	06/29/18 10:51	
EPA 6010D	Zinc, Dissolved	17.9J	ug/L	20.0	06/29/18 10:51	
SM 2320B	Alkalinity, Total as CaCO3	224	mg/L	5.0	07/09/18 15:53	
SM 2540C	Total Dissolved Solids	245	mg/L	10.0	06/28/18 08:16	
EPA 300.0	Chloride	3.3	mg/L	1.2	06/27/18 13:14	
EPA 300.0	Nitrate as N	1.4	mg/L	0.10	06/27/18 13:14	
EPA 300.0	Sulfate	4.7	mg/L	1.2	06/27/18 13:14	
EPA 353.2	Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	06/27/18 15:39	
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	07/03/18 15:15	
10437242003	**062518-MW13S**					
EPA 6010D	Barium, Dissolved	60.9	ug/L	10.0	06/29/18 10:52	
EPA 6010D	Calcium, Dissolved	36300	ug/L	500	06/29/18 10:52	
EPA 6010D	Chromium, Dissolved	1.2J	ug/L	10.0	06/29/18 10:52	
EPA 6010D	Iron, Dissolved	10.3J	ug/L	50.0	06/29/18 10:52	
EPA 6010D	Magnesium, Dissolved	10700	ug/L	500	06/29/18 10:52	
EPA 6010D	Manganese, Dissolved	0.26J	ug/L	5.0	06/29/18 10:52	
EPA 6010D	Potassium, Dissolved	1280J	ug/L	2500	06/29/18 10:52	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437242003	**062518-MW13S**					
EPA 6010D	Sodium, Dissolved	14000	ug/L	1000	06/29/18 10:52	
EPA 6010D	Vanadium, Dissolved	10.0J	ug/L	15.0	06/29/18 10:52	
EPA 6010D	Zinc, Dissolved	2.6J	ug/L	20.0	06/29/18 10:52	
SM 2320B	Alkalinity, Total as CaCO3	162	mg/L	5.0	07/09/18 15:56	
SM 2540C	Total Dissolved Solids	192	mg/L	10.0	06/28/18 08:16	
EPA 300.0	Chloride	1.2J	mg/L	1.2	06/27/18 13:29	B
EPA 300.0	Nitrate as N	0.31	mg/L	0.10	06/27/18 13:29	
EPA 300.0	Sulfate	4.6	mg/L	1.2	06/27/18 13:29	
EPA 353.2	Nitrogen, NO2 plus NO3	0.33	mg/L	0.10	06/28/18 15:25	
SM 5310C	Total Organic Carbon	0.89J	mg/L	1.0	07/03/18 15:31	
10437242004	**062518-W20**					
RSK 175	Methane	375	ug/L	10.0	06/28/18 09:21	
EPA 6010D	Barium, Dissolved	4.2J	ug/L	10.0	06/29/18 10:54	
EPA 6010D	Calcium, Dissolved	14300	ug/L	500	06/29/18 10:54	
EPA 6010D	Iron, Dissolved	180	ug/L	50.0	06/29/18 10:54	
EPA 6010D	Magnesium, Dissolved	6820	ug/L	500	06/29/18 10:54	
EPA 6010D	Manganese, Dissolved	51.9	ug/L	5.0	06/29/18 10:54	
EPA 6010D	Potassium, Dissolved	1940J	ug/L	2500	06/29/18 10:54	
EPA 6010D	Sodium, Dissolved	9110	ug/L	1000	06/29/18 10:54	
SM 2320B	Alkalinity, Total as CaCO3	91.6	mg/L	5.0	07/09/18 16:00	
SM 2540C	Total Dissolved Solids	72.0	mg/L	10.0	06/28/18 08:16	
EPA 300.0	Chloride	2.4	mg/L	1.2	06/27/18 13:45	B
EPA 300.0	Sulfate	0.61J	mg/L	1.2	06/27/18 13:45	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	07/03/18 15:48	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437242

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 113936

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2079529001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 490989)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 547116

B: Analyte was detected in the associated method blank.

- BLANK for HBN 547116 [WETA/358 (Lab ID: 2974516)
  - Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547116

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437028001,10437028002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2974520)
  - Sulfate
- MSD (Lab ID: 2974521)
  - Sulfate

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2974518)
  - Sulfate
- MSD (Lab ID: 2974519)
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 547658

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2976961)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2976962)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437242

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-W26 **Lab ID: 10437242001** Collected: 06/25/18 14:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		06/28/18 08:59	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		06/28/18 08:59	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		06/28/18 08:59	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	06/28/18 14:37	06/29/18 10:37	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	06/28/18 14:37	06/29/18 10:37	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	06/28/18 14:37	06/29/18 10:37	7440-38-2	
Barium, Dissolved	**6.4J**	ug/L	10.0	0.18	1	06/28/18 14:37	06/29/18 10:37	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	06/28/18 14:37	06/29/18 10:37	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	06/28/18 14:37	06/29/18 10:37	7440-43-9	
Calcium, Dissolved	**38700**	ug/L	500	13.9	1	06/28/18 14:37	06/29/18 10:37	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	06/28/18 14:37	06/29/18 10:37	7440-47-3	
Cobalt, Dissolved	**0.55J**	ug/L	10.0	0.50	1	06/28/18 14:37	06/29/18 10:37	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	06/28/18 14:37	06/29/18 10:37	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	06/28/18 14:37	06/29/18 10:37	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	06/28/18 14:37	06/29/18 10:37	7439-92-1	
Magnesium, Dissolved	**11100**	ug/L	500	9.8	1	06/28/18 14:37	06/29/18 10:37	7439-95-4	
Manganese, Dissolved	**0.42J**	ug/L	5.0	0.22	1	06/28/18 14:37	06/29/18 10:37	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	06/28/18 14:37	06/29/18 10:37	7440-02-0	
Potassium, Dissolved	**2210J**	ug/L	2500	310	1	06/28/18 14:37	06/29/18 10:37	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	06/28/18 14:37	06/29/18 10:37	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	06/28/18 14:37	06/29/18 10:37	7440-22-4	
Sodium, Dissolved	**13400**	ug/L	1000	21.5	1	06/28/18 14:37	06/29/18 10:37	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	06/28/18 14:37	06/29/18 10:37	7440-28-0	
Vanadium, Dissolved	**7.2J**	ug/L	15.0	0.29	1	06/28/18 14:37	06/29/18 10:37	7440-62-2	
Zinc, Dissolved	**86.1**	ug/L	20.0	2.5	1	06/28/18 14:37	06/29/18 10:37	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	06/29/18 13:54	07/02/18 14:04	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**151**	mg/L	5.0	1.0	1		07/09/18 15:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**215**	mg/L	10.0	5.0	1		06/28/18 08:16		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/02/18 22:11	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.4**	mg/L	1.2	0.28	1		06/27/18 12:59	16887-00-6	
Nitrate as N	**2.9**	mg/L	0.10	0.015	1		06/27/18 12:59	14797-55-8	
Sulfate	**10.2**	mg/L	1.2	0.19	1		06/27/18 12:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-W26 **Lab ID: 10437242001** Collected: 06/25/18 14:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.7**	mg/L	0.50	0.054	5		06/27/18 15:45		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/06/18 10:57	07/06/18 14:12		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.90J**	mg/L	1.0	0.20	1		07/03/18 14:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-Marlow2 **Lab ID: 10437242002** Collected: 06/25/18 15:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		06/28/18 09:06	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		06/28/18 09:06	74-85-1	
Methane	**95.7**	ug/L	10.0	4.9	1		06/28/18 09:06	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**16.3J**	ug/L	200	15.5	1	06/28/18 14:37	06/29/18 10:51	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	06/28/18 14:37	06/29/18 10:51	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	06/28/18 14:37	06/29/18 10:51	7440-38-2	
Barium, Dissolved	**22.1**	ug/L	10.0	0.18	1	06/28/18 14:37	06/29/18 10:51	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	06/28/18 14:37	06/29/18 10:51	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	06/28/18 14:37	06/29/18 10:51	7440-43-9	
Calcium, Dissolved	**55800**	ug/L	500	13.9	1	06/28/18 14:37	06/29/18 10:51	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	06/28/18 14:37	06/29/18 10:51	7440-47-3	
Cobalt, Dissolved	**0.51J**	ug/L	10.0	0.50	1	06/28/18 14:37	06/29/18 10:51	7440-48-4	
Copper, Dissolved	**1.3J**	ug/L	10.0	1.2	1	06/28/18 14:37	06/29/18 10:51	7440-50-8	
Iron, Dissolved	**2100**	ug/L	50.0	4.3	1	06/28/18 14:37	06/29/18 10:51	7439-89-6	
Lead, Dissolved	**2.4J**	ug/L	10.0	2.0	1	06/28/18 14:37	06/29/18 10:51	7439-92-1	
Magnesium, Dissolved	**15600**	ug/L	500	9.8	1	06/28/18 14:37	06/29/18 10:51	7439-95-4	
Manganese, Dissolved	**125**	ug/L	5.0	0.22	1	06/28/18 14:37	06/29/18 10:51	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	06/28/18 14:37	06/29/18 10:51	7440-02-0	
Potassium, Dissolved	**621J**	ug/L	2500	310	1	06/28/18 14:37	06/29/18 10:51	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	06/28/18 14:37	06/29/18 10:51	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	06/28/18 14:37	06/29/18 10:51	7440-22-4	
Sodium, Dissolved	**15300**	ug/L	1000	21.5	1	06/28/18 14:37	06/29/18 10:51	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	06/28/18 14:37	06/29/18 10:51	7440-28-0	
Vanadium, Dissolved	**3.2J**	ug/L	15.0	0.29	1	06/28/18 14:37	06/29/18 10:51	7440-62-2	
Zinc, Dissolved	**17.9J**	ug/L	20.0	2.5	1	06/28/18 14:37	06/29/18 10:51	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	06/29/18 13:54	07/02/18 14:06	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**224**	mg/L	5.0	1.0	1		07/09/18 15:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**245**	mg/L	10.0	5.0	1		06/28/18 08:16		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/02/18 22:11	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.2	0.28	1		06/27/18 13:14	16887-00-6	
Nitrate as N	**1.4**	mg/L	0.10	0.015	1		06/27/18 13:14	14797-55-8	
Sulfate	**4.7**	mg/L	1.2	0.19	1		06/27/18 13:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-Marlow2 **Lab ID: 10437242002** Collected: 06/25/18 15:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.1**	mg/L	0.10	0.011	1		06/27/18 15:39		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/06/18 10:57	07/06/18 14:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.2**	mg/L	1.0	0.20	1		07/03/18 15:15	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-MW13S **Lab ID: 10437242003** Collected: 06/25/18 16:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		06/28/18 09:14	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		06/28/18 09:14	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		06/28/18 09:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	06/28/18 14:37	06/29/18 10:52	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	06/28/18 14:37	06/29/18 10:52	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	06/28/18 14:37	06/29/18 10:52	7440-38-2	
Barium, Dissolved	**60.9**	ug/L	10.0	0.18	1	06/28/18 14:37	06/29/18 10:52	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	06/28/18 14:37	06/29/18 10:52	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	06/28/18 14:37	06/29/18 10:52	7440-43-9	
Calcium, Dissolved	**36300**	ug/L	500	13.9	1	06/28/18 14:37	06/29/18 10:52	7440-70-2	
Chromium, Dissolved	**1.2J**	ug/L	10.0	0.49	1	06/28/18 14:37	06/29/18 10:52	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	06/28/18 14:37	06/29/18 10:52	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	06/28/18 14:37	06/29/18 10:52	7440-50-8	
Iron, Dissolved	**10.3J**	ug/L	50.0	4.3	1	06/28/18 14:37	06/29/18 10:52	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	06/28/18 14:37	06/29/18 10:52	7439-92-1	
Magnesium, Dissolved	**10700**	ug/L	500	9.8	1	06/28/18 14:37	06/29/18 10:52	7439-95-4	
Manganese, Dissolved	**0.26J**	ug/L	5.0	0.22	1	06/28/18 14:37	06/29/18 10:52	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	06/28/18 14:37	06/29/18 10:52	7440-02-0	
Potassium, Dissolved	**1280J**	ug/L	2500	310	1	06/28/18 14:37	06/29/18 10:52	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	06/28/18 14:37	06/29/18 10:52	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	06/28/18 14:37	06/29/18 10:52	7440-22-4	
Sodium, Dissolved	**14000**	ug/L	1000	21.5	1	06/28/18 14:37	06/29/18 10:52	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	06/28/18 14:37	06/29/18 10:52	7440-28-0	
Vanadium, Dissolved	**10.0J**	ug/L	15.0	0.29	1	06/28/18 14:37	06/29/18 10:52	7440-62-2	
Zinc, Dissolved	**2.6J**	ug/L	20.0	2.5	1	06/28/18 14:37	06/29/18 10:52	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	06/29/18 13:54	07/02/18 14:09	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**162**	mg/L	5.0	1.0	1		07/09/18 15:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**192**	mg/L	10.0	5.0	1		06/28/18 08:16		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/02/18 22:12	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.28	1		06/27/18 13:29	16887-00-6	B
Nitrate as N	**0.31**	mg/L	0.10	0.015	1		06/27/18 13:29	14797-55-8	
Sulfate	**4.6**	mg/L	1.2	0.19	1		06/27/18 13:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-MW13S **Lab ID: 10437242003** Collected: 06/25/18 16:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.33**	mg/L	0.10	0.011	1		06/28/18 15:25		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/06/18 10:57	07/06/18 14:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.89J**	mg/L	1.0	0.20	1		07/03/18 15:31	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-W20 **Lab ID: 10437242004** Collected: 06/25/18 17:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		06/28/18 09:21	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		06/28/18 09:21	74-85-1	
Methane	**375**	ug/L	10.0	4.9	1		06/28/18 09:21	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	06/28/18 14:37	06/29/18 10:54	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	06/28/18 14:37	06/29/18 10:54	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	06/28/18 14:37	06/29/18 10:54	7440-38-2	
Barium, Dissolved	**4.2J**	ug/L	10.0	0.18	1	06/28/18 14:37	06/29/18 10:54	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	06/28/18 14:37	06/29/18 10:54	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	06/28/18 14:37	06/29/18 10:54	7440-43-9	
Calcium, Dissolved	**14300**	ug/L	500	13.9	1	06/28/18 14:37	06/29/18 10:54	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	06/28/18 14:37	06/29/18 10:54	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	06/28/18 14:37	06/29/18 10:54	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	06/28/18 14:37	06/29/18 10:54	7440-50-8	
Iron, Dissolved	**180**	ug/L	50.0	4.3	1	06/28/18 14:37	06/29/18 10:54	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	06/28/18 14:37	06/29/18 10:54	7439-92-1	
Magnesium, Dissolved	**6820**	ug/L	500	9.8	1	06/28/18 14:37	06/29/18 10:54	7439-95-4	
Manganese, Dissolved	**51.9**	ug/L	5.0	0.22	1	06/28/18 14:37	06/29/18 10:54	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	06/28/18 14:37	06/29/18 10:54	7440-02-0	
Potassium, Dissolved	**1940J**	ug/L	2500	310	1	06/28/18 14:37	06/29/18 10:54	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	06/28/18 14:37	06/29/18 10:54	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	06/28/18 14:37	06/29/18 10:54	7440-22-4	
Sodium, Dissolved	**9110**	ug/L	1000	21.5	1	06/28/18 14:37	06/29/18 10:54	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	06/28/18 14:37	06/29/18 10:54	7440-28-0	
Vanadium, Dissolved	**<0.29**	ug/L	15.0	0.29	1	06/28/18 14:37	06/29/18 10:54	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	06/28/18 14:37	06/29/18 10:54	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	06/29/18 13:54	07/02/18 14:11	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**91.6**	mg/L	5.0	1.0	1		07/09/18 16:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**72.0**	mg/L	10.0	5.0	1		06/28/18 08:16		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/02/18 22:13	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.28	1		06/27/18 13:45	16887-00-6	B
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		06/27/18 13:45	14797-55-8	
Sulfate	**0.61J**	mg/L	1.2	0.19	1		06/27/18 13:45	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Sample: 062518-W20 **Lab ID: 10437242004** Collected: 06/25/18 17:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.011**	mg/L	0.10	0.011	1		06/28/18 15:28		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/06/18 10:57	07/06/18 14:13		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		07/03/18 15:48	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547489   Analysis Method: RSK 175
QC Batch Method: RSK 175   Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2976341   Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	06/28/18 06:53	
Ethene	ug/L	<2.9	10.0	2.9	06/28/18 06:53	
Methane	ug/L	<4.9	10.0	4.9	06/28/18 06:53	

LABORATORY CONTROL SAMPLE & LCSD: 2976342   2976343

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	107	94	94	85-115	0	20	
Ethene	ug/L	106	100	100	95	94	85-115	0	20	
Methane	ug/L	60.7	59.2	58.9	98	97	85-115	0	20	

SAMPLE DUPLICATE: 2976344

Parameter	Units	60273232026 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	19600	19600	0	20	

SAMPLE DUPLICATE: 2976345

Parameter	Units	60273329005 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	383	419	9	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547768   Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A   Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2977766   Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/02/18 13:57	

LABORATORY CONTROL SAMPLE: 2977767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.7	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977768   2977769

Parameter	Units	10437486002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.6	5.7	111	114	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547537 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2976485 Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	06/29/18 10:29	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	06/29/18 10:29	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	06/29/18 10:29	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	06/29/18 10:29	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	06/29/18 10:29	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	06/29/18 10:29	
Calcium, Dissolved	ug/L	<13.9	500	13.9	06/29/18 10:29	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	06/29/18 10:29	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	06/29/18 10:29	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	06/29/18 10:29	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	06/29/18 10:29	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	06/29/18 10:29	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	06/29/18 10:29	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	06/29/18 10:29	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	06/29/18 10:29	
Potassium, Dissolved	ug/L	<310	2500	310	06/29/18 10:29	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	06/29/18 10:29	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	06/29/18 10:29	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	06/29/18 10:29	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	06/29/18 10:29	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	06/29/18 10:29	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	06/29/18 10:29	

LABORATORY CONTROL SAMPLE: 2976486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21500	107	80-120	
Antimony, Dissolved	ug/L	1000	999	100	80-120	
Arsenic, Dissolved	ug/L	1000	1000	100	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1020	102	80-120	
Calcium, Dissolved	ug/L	20000	20300	101	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	987	99	80-120	
Iron, Dissolved	ug/L	20000	20300	101	80-120	
Lead, Dissolved	ug/L	1000	1020	102	80-120	
Magnesium, Dissolved	ug/L	20000	20600	103	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

LABORATORY CONTROL SAMPLE: 2976486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20300	101	80-120	
Selenium, Dissolved	ug/L	1000	1060	106	80-120	
Silver, Dissolved	ug/L	500	505	101	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1010	101	80-120	
Vanadium, Dissolved	ug/L	1000	1010	101	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976487 2976488

Parameter	Units	10437242001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21900	21600	110	108	75-125	1	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1010	101	101	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1010	102	100	75-125	1	20	
Barium, Dissolved	ug/L	6.4J	1000	1000	1060	1050	105	104	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1050	1030	105	103	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1030	1020	103	102	75-125	1	20	
Calcium, Dissolved	ug/L	38700	20000	20000	59800	58700	105	100	75-125	2	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	1030	1010	103	101	75-125	2	20	
Cobalt, Dissolved	ug/L	0.55J	1000	1000	1020	1010	102	101	75-125	2	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	1010	993	100	99	75-125	1	20	
Iron, Dissolved	ug/L	<4.3	20000	20000	20500	20500	102	102	75-125	0	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1030	1010	103	101	75-125	2	20	
Magnesium, Dissolved	ug/L	11100	20000	20000	32600	32200	108	106	75-125	1	20	
Manganese, Dissolved	ug/L	0.42J	1000	1000	1040	1030	104	103	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	1020	1000	102	100	75-125	2	20	
Potassium, Dissolved	ug/L	2210J	20000	20000	23100	22800	104	103	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1060	1040	106	104	75-125	2	20	
Silver, Dissolved	ug/L	<0.38	500	500	512	506	102	101	75-125	1	20	
Sodium, Dissolved	ug/L	13400	20000	20000	33500	33000	100	98	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1030	1010	103	101	75-125	2	20	
Vanadium, Dissolved	ug/L	7.2J	1000	1000	1030	1020	103	101	75-125	2	20	
Zinc, Dissolved	ug/L	86.1	1000	1000	1110	1090	103	101	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 549244 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2985704 | Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/09/18 14:43	

LABORATORY CONTROL SAMPLE & LCSD: 2985705 | 2985706

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.0	42.0	103	105	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985707 | 2985708

Parameter	Units	10437049004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	84.3	40	40	127	126	106	103	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985709 | 2985710

Parameter	Units	10437663001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	32.1	40	40	72.7	72.6	102	101	80-120	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547480 — Analysis Method: SM 2540C
QC Batch Method: SM 2540C — Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2976297 — Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	06/28/18 08:16	

LABORATORY CONTROL SAMPLE & LCSD: 2976298 — 2976299

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	946	950	95	95	80-120	0	10	

SAMPLE DUPLICATE: 2976300

Parameter	Units	10437072001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1270	1260	1	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 113936 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 490986 | Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/02/18 22:07	

LABORATORY CONTROL SAMPLE: 490987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 490989

Parameter	Units	2079529001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.089	41	75-125	M1

SAMPLE DUPLICATE: 490988

Parameter	Units	2079529001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	0.0060J		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547116 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2974516 Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31J	1.2	0.28	06/27/18 04:36	
Nitrate as N	mg/L	<0.015	0.10	0.015	06/27/18 04:36	
Sulfate	mg/L	<0.19	1.2	0.19	06/27/18 04:36	

LABORATORY CONTROL SAMPLE: 2974517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.3	99	90-110	
Nitrate as N	mg/L	1	0.98	98	90-110	
Sulfate	mg/L	12.5	12.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974518 2974519

Parameter	Units	10437028001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	13.5	13.4	98	97	90-110	0	20	
Nitrate as N	mg/L	0.20	1	1	1.2	1.2	98	98	90-110	0	20	
Sulfate	mg/L	158	125	125	300	312	114	124	90-110	4	20	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974520 2974521

Parameter	Units	10437028002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.98J	12.5	12.5	13.1	13.0	97	96	90-110	0	20	
Nitrate as N	mg/L	0.076J	1	1	1.0	1.0	96	95	90-110	0	20	
Sulfate	mg/L	27.3	12.5	12.5	31.5	31.7	34	35	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547402
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437242001, 10437242002

METHOD BLANK: 2975805
Matrix: Water
Associated Lab Samples: 10437242001, 10437242002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	06/27/18 15:42	

LABORATORY CONTROL SAMPLE: 2975806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2975807 2975808

Parameter	Units	10437028005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.079J	1	1	0.98	1.0	91	96	90-110	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 547658 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437242003, 10437242004

METHOD BLANK: 2976959 | Matrix: Water
Associated Lab Samples: 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	06/28/18 15:38	

LABORATORY CONTROL SAMPLE: 2976960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976961 2976962

Parameter	Units	10437396003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	30.2	20	20	48.8	48.4	93	91	90-110	1	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976963 2976964

Parameter	Units	10437242003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.33	1	1	1.3	1.3	95	100	90-110	4	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 548849 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 2983666 | Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/06/18 14:12	

LABORATORY CONTROL SAMPLE: 2983667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	308	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983668 2983669

Parameter	Units	10437242001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	253	254	101	102	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

QC Batch: 146406 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

METHOD BLANK: 578526 Matrix: Water
Associated Lab Samples: 10437242001, 10437242002, 10437242003, 10437242004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/03/18 11:51	

LABORATORY CONTROL SAMPLE: 578527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.5	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 578528 578529

Parameter	Units	10436886011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	10.7	50	50	66.0	65.9	111	110	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437242

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437242001	**062518-W26**	RSK 175	547489		
10437242002	**062518-Marlow2**	RSK 175	547489		
10437242003	**062518-MW13S**	RSK 175	547489		
10437242004	**062518-W20**	RSK 175	547489		
10437242001	**062518-W26**	EPA 3010	547537	EPA 6010D	547763
10437242002	**062518-Marlow2**	EPA 3010	547537	EPA 6010D	547763
10437242003	**062518-MW13S**	EPA 3010	547537	EPA 6010D	547763
10437242004	**062518-W20**	EPA 3010	547537	EPA 6010D	547763
10437242001	**062518-W26**	EPA 7470A	547768	EPA 7470A	547926
10437242002	**062518-Marlow2**	EPA 7470A	547768	EPA 7470A	547926
10437242003	**062518-MW13S**	EPA 7470A	547768	EPA 7470A	547926
10437242004	**062518-W20**	EPA 7470A	547768	EPA 7470A	547926
10437242001	**062518-W26**	SM 2320B	549244		
10437242002	**062518-Marlow2**	SM 2320B	549244		
10437242003	**062518-MW13S**	SM 2320B	549244		
10437242004	**062518-W20**	SM 2320B	549244		
10437242001	**062518-W26**	SM 2540C	547480		
10437242002	**062518-Marlow2**	SM 2540C	547480		
10437242003	**062518-MW13S**	SM 2540C	547480		
10437242004	**062518-W20**	SM 2540C	547480		
10437242001	**062518-W26**	SM 4500-S-2 D	113936		
10437242002	**062518-Marlow2**	SM 4500-S-2 D	113936		
10437242003	**062518-MW13S**	SM 4500-S-2 D	113936		
10437242004	**062518-W20**	SM 4500-S-2 D	113936		
10437242001	**062518-W26**	EPA 300.0	547116		
10437242002	**062518-Marlow2**	EPA 300.0	547116		
10437242003	**062518-MW13S**	EPA 300.0	547116		
10437242004	**062518-W20**	EPA 300.0	547116		
10437242001	**062518-W26**	EPA 353.2	547402		
10437242002	**062518-Marlow2**	EPA 353.2	547402		
10437242003	**062518-MW13S**	EPA 353.2	547658		
10437242004	**062518-W20**	EPA 353.2	547658		
10437242001	**062518-W26**	EPA 410.4	548849	EPA 410.4	548985
10437242002	**062518-Marlow2**	EPA 410.4	548849	EPA 410.4	548985
10437242003	**062518-MW13S**	EPA 410.4	548849	EPA 410.4	548985
10437242004	**062518-W20**	EPA 410.4	548849	EPA 410.4	548985
10437242001	**062518-W26**	SM 5310C	146406		
10437242002	**062518-Marlow2**	SM 5310C	146406		
10437242003	**062518-MW13S**	SM 5310C	146406		
10437242004	**062518-W20**	SM 5310C	146406		

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CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b

WO#: 10437242

10437242

Section A
Required Client Information:

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500
Spokane, WA 99201
Email:
Phone: Fax:
Requested Due Date: ***10 Day Standard***

Section B
Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: Freeman WA-Grain Handling Facility
Project #: 1497

Section C
Invoice Information:

Attention: Anne Walsh
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062518-W26	WT	G	6/25	1430	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		001	24 hr hold !!
2	062518-MarlowZ	↓	↓	↓	1530	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		002	↓
3	062518-MW135				1630	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		003	
4	062518-W20				1730	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		004	
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/26/18	1530	[signature] / Pace	6/27/18	0925	2.1	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature]
DATE Signed: 6/25/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #: **WO#: 10437242**

PM: JMG **Due Date:** 07/05/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7222 2739 6540

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.1 **Cooler Temp Corrected (°C):** 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** 6/27/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No MS/MSD Requested/Provided
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-4 1:1 1:1 1:1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1050	Temp: 2.1	Corrected Temp: 2.1
Time: 1110	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 06/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 12111180
PM: HRZ Due Date: 07/12/18
CLIENT: PACE MPLS

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437242 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/27/2018 Results Requested By: 7/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	062518-W26	PS	6/25/2018 14:30	10437242001	Water	2	X	
2	062518-Marlow2	PS	6/25/2018 15:30	10437242002	Water	2	X	
3	062518-MW13S	PS	6/25/2018 16:30	10437242003	Water	2	X	
4	062518-W20	PS	6/25/2018 17:30	10437242004	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle / Pace	6/27/18 1615	[illegible]	6/28/18 1020
2				
3				

Comments

Cooler Temperature on Receipt 2.7 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: MPLS

Project #: WO#:12111180 PM: HRZ Due Date: 07/12/18 CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.4 Cooler Temp Corrected °C: 2.7 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: 0.3+ Date and Initials of Person Examining Contents: KAH 6/28/18

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 6/28/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Pace Analytical® www.pacelabs.com

Workorder: 10437242 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 6/27/2018 **Results Requested By:** 7/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis

WO#: 2079416

2079416

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	062518-W26	PS	6/25/2018 14:30	10437242001	Water	1	X	
2	062518-Marlow2	PS	6/25/2018 15:30	10437242002	Water	1	X	
3	062518-MW13S	PS	6/25/2018 16:30	10437242003	Water	1	X	
4	062518-W20	PS	6/25/2018 17:30	10437242004	Water	1	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible signature]	6/27/18 1505	Fed Ex	
2	Fed Ex	6-28-18 0835	[illegible signature] / Pace	6-28-18
3				

Comments: 0835

Cooler Temperature on Receipt 1-5 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

Sample Condition Upon Re

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje

WO#:2079416

PM: CMM Due Date: 07/12/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒Yes ☐No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 06-29-18 B

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☒Yes ☐No ☐N/A	1
Chain of Custody Present:	☒Yes ☐No ☐N/A	2
Chain of Custody Complete:	☒Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	5
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	6
Sufficient Volume:	☒Yes ☐No ☐N/A	7
Correct Containers Used:	☒Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☐No ☒N/A	9
Sample Labels match COC:	☒Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	14
Trip Blank Present:	☐Yes ☒No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437265

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437265001	**062518-W26**	Water	06/25/18 14:30	06/27/18 09:25
10437265002	**062518-MW13S**	Water	06/25/18 16:30	06/27/18 09:25
10437265003	**062518-W20**	Water	06/25/18 17:30	06/27/18 09:25
10437265004	**Trip Blank**	Water	06/25/18 00:00	06/27/18 09:25

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437265001	**062518-W26**	EPA 8260B	AEZ	83	PASI-M
10437265002	**062518-MW13S**	EPA 8260B	AEZ	83	PASI-M
10437265003	**062518-W20**	EPA 8260B	AEZ	83	PASI-M
10437265004	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437265001	**062518-W26**					
EPA 8260B	Carbon disulfide	0.097J	ug/L	1.0	06/29/18 05:58	B
EPA 8260B	Carbon tetrachloride	34.7	ug/L	0.50	06/29/18 05:58	
EPA 8260B	Chloroform	2.8	ug/L	1.0	06/29/18 05:58	
10437265004	**Trip Blank**					
EPA 8260B	Chloroform	0.64J	ug/L	1.0	06/29/18 00:28	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 02, 2018

General Information:
4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 547569

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- 062518-MW13S (Lab ID: 10437265002)
  - Bromomethane
- 062518-W20 (Lab ID: 10437265003)
  - Bromomethane
- 062518-W26 (Lab ID: 10437265001)
  - Bromomethane
- BLANK (Lab ID: 2976583)
  - Bromomethane
- DUP (Lab ID: 2976587)
  - Bromomethane
- LCS (Lab ID: 2976584)
  - Bromomethane
- LCSD (Lab ID: 2976585)
  - Bromomethane
- MS (Lab ID: 2976586)
  - Bromomethane
- Trip Blank (Lab ID: 10437265004)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 02, 2018

QC Batch: 547569

B: Analyte was detected in the associated method blank.

- BLANK for HBN 547569 [MSV/4446 (Lab ID: 2976583)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547569

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 547569

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062518-MW13S (Lab ID: 10437265002)
  - Dichlorofluoromethane
- 062518-W20 (Lab ID: 10437265003)
  - Dichlorofluoromethane
- 062518-W26 (Lab ID: 10437265001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2976583)
  - Dichlorofluoromethane
- DUP (Lab ID: 2976587)
  - Dichlorofluoromethane
- LCS (Lab ID: 2976584)
  - Dichlorofluoromethane
- LCSD (Lab ID: 2976585)
  - Dichlorofluoromethane
- MS (Lab ID: 2976586)
  - Dichlorofluoromethane
- Trip Blank (Lab ID: 10437265004)
  - Dichlorofluoromethane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-W26 **Lab ID: 10437265001** Collected: 06/25/18 14:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		06/29/18 05:58	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		06/29/18 05:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 05:58	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		06/29/18 05:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		06/29/18 05:58	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 05:58	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 05:58	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 05:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		06/29/18 05:58	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		06/29/18 05:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 05:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		06/29/18 05:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		06/29/18 05:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		06/29/18 05:58	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 05:58	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 05:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		06/29/18 05:58	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 05:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 05:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 05:58	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		06/29/18 05:58	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 05:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		06/29/18 05:58	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		06/29/18 05:58	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		06/29/18 05:58	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		06/29/18 05:58	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 05:58	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		06/29/18 05:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		06/29/18 05:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		06/29/18 05:58	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		06/29/18 05:58	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		06/29/18 05:58	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		06/29/18 05:58	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 05:58	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		06/29/18 05:58	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		06/29/18 05:58	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 05:58	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		06/29/18 05:58	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		06/29/18 05:58	74-83-9	CL
Carbon disulfide	**0.097J**	ug/L	1.0	0.078	1		06/29/18 05:58	75-15-0	B
Carbon tetrachloride	**34.7**	ug/L	0.50	0.19	1		06/29/18 05:58	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 05:58	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		06/29/18 05:58	75-00-3	
Chloroform	**2.8**	ug/L	1.0	0.45	1		06/29/18 05:58	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 05:58	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		06/29/18 05:58	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-W26 **Lab ID: 10437265001** Collected: 06/25/18 14:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		06/29/18 05:58	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		06/29/18 05:58	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		06/29/18 05:58	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		06/29/18 05:58	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		06/29/18 05:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 05:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 05:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		06/29/18 05:58	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		06/29/18 05:58	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		06/29/18 05:58	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		06/29/18 05:58	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		06/29/18 05:58	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 05:58	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		06/29/18 05:58	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		06/29/18 05:58	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		06/29/18 05:58	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		06/29/18 05:58	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		06/29/18 05:58	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		06/29/18 05:58	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		06/29/18 05:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 05:58	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 05:58	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 05:58	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		06/29/18 05:58	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 05:58	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 05:58	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 05:58	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 05:58	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		06/29/18 05:58	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		06/29/18 05:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 05:58	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 05:58	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		06/29/18 05:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		06/29/18 05:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		06/29/18 05:58	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		06/29/18 05:58	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125		1		06/29/18 05:58	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-MW13S **Lab ID: 10437265002** Collected: 06/25/18 16:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:22	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:22	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		06/29/18 06:22	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:22	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:22	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:22	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		06/29/18 06:22	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		06/29/18 06:22	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		06/29/18 06:22	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		06/29/18 06:22	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		06/29/18 06:22	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:22	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 06:22	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		06/29/18 06:22	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 06:22	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:22	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:22	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		06/29/18 06:22	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:22	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		06/29/18 06:22	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		06/29/18 06:22	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		06/29/18 06:22	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		06/29/18 06:22	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:22	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		06/29/18 06:22	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		06/29/18 06:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		06/29/18 06:22	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		06/29/18 06:22	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		06/29/18 06:22	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		06/29/18 06:22	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 06:22	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		06/29/18 06:22	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		06/29/18 06:22	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 06:22	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		06/29/18 06:22	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		06/29/18 06:22	74-83-9	CL
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		06/29/18 06:22	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		06/29/18 06:22	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:22	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		06/29/18 06:22	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		06/29/18 06:22	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 06:22	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:22	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-MW13S **Lab ID: 10437265002** Collected: 06/25/18 16:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		06/29/18 06:22	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		06/29/18 06:22	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		06/29/18 06:22	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		06/29/18 06:22	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:22	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 06:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:22	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:22	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		06/29/18 06:22	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		06/29/18 06:22	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		06/29/18 06:22	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:22	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		06/29/18 06:22	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		06/29/18 06:22	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		06/29/18 06:22	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		06/29/18 06:22	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		06/29/18 06:22	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		06/29/18 06:22	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		06/29/18 06:22	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:22	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:22	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 06:22	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		06/29/18 06:22	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 06:22	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:22	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:22	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:22	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		06/29/18 06:22	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		06/29/18 06:22	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:22	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:22	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		06/29/18 06:22	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		06/29/18 06:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		06/29/18 06:22	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		06/29/18 06:22	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		06/29/18 06:22	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-W20 **Lab ID: 10437265003** Collected: 06/25/18 17:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:45	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:45	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:45	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		06/29/18 06:45	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:45	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:45	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:45	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		06/29/18 06:45	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		06/29/18 06:45	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:45	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		06/29/18 06:45	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		06/29/18 06:45	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		06/29/18 06:45	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:45	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 06:45	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		06/29/18 06:45	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 06:45	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:45	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:45	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		06/29/18 06:45	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:45	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		06/29/18 06:45	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		06/29/18 06:45	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		06/29/18 06:45	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		06/29/18 06:45	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:45	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		06/29/18 06:45	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		06/29/18 06:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		06/29/18 06:45	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		06/29/18 06:45	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		06/29/18 06:45	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		06/29/18 06:45	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 06:45	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		06/29/18 06:45	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		06/29/18 06:45	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 06:45	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		06/29/18 06:45	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		06/29/18 06:45	74-83-9	CL
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		06/29/18 06:45	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		06/29/18 06:45	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:45	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		06/29/18 06:45	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		06/29/18 06:45	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 06:45	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:45	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: 062518-W20 **Lab ID: 10437265003** Collected: 06/25/18 17:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		06/29/18 06:45	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		06/29/18 06:45	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		06/29/18 06:45	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		06/29/18 06:45	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:45	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 06:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 06:45	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		06/29/18 06:45	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:45	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		06/29/18 06:45	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		06/29/18 06:45	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		06/29/18 06:45	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 06:45	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		06/29/18 06:45	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		06/29/18 06:45	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		06/29/18 06:45	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		06/29/18 06:45	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		06/29/18 06:45	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		06/29/18 06:45	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		06/29/18 06:45	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:45	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 06:45	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 06:45	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		06/29/18 06:45	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 06:45	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 06:45	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:45	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:45	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		06/29/18 06:45	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		06/29/18 06:45	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 06:45	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 06:45	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		06/29/18 06:45	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		06/29/18 06:45	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		06/29/18 06:45	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		06/29/18 06:45	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		06/29/18 06:45	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Sample: Trip Blank | **Lab ID: 10437265004** | Collected: 06/25/18 00:00 | Received: 06/27/18 09:25 | Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		06/29/18 00:28	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		06/29/18 00:28	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 00:28	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		06/29/18 00:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		06/29/18 00:28	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 00:28	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 00:28	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 00:28	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		06/29/18 00:28	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		06/29/18 00:28	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 00:28	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		06/29/18 00:28	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		06/29/18 00:28	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		06/29/18 00:28	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 00:28	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 00:28	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		06/29/18 00:28	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 00:28	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 00:28	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 00:28	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		06/29/18 00:28	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 00:28	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		06/29/18 00:28	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		06/29/18 00:28	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		06/29/18 00:28	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		06/29/18 00:28	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 00:28	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		06/29/18 00:28	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		06/29/18 00:28	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		06/29/18 00:28	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		06/29/18 00:28	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		06/29/18 00:28	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		06/29/18 00:28	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 00:28	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		06/29/18 00:28	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		06/29/18 00:28	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 00:28	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		06/29/18 00:28	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		06/29/18 00:28	74-83-9	CL
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		06/29/18 00:28	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		06/29/18 00:28	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 00:28	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		06/29/18 00:28	75-00-3	
Chloroform	**0.64J**	ug/L	1.0	0.45	1		06/29/18 00:28	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 00:28	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		06/29/18 00:28	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437265

Sample: Trip Blank **Lab ID: 10437265004** Collected: 06/25/18 00:00 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		06/29/18 00:28	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		06/29/18 00:28	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		06/29/18 00:28	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		06/29/18 00:28	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		06/29/18 00:28	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 00:28	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 00:28	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		06/29/18 00:28	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		06/29/18 00:28	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		06/29/18 00:28	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		06/29/18 00:28	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		06/29/18 00:28	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 00:28	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		06/29/18 00:28	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		06/29/18 00:28	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		06/29/18 00:28	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		06/29/18 00:28	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		06/29/18 00:28	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		06/29/18 00:28	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		06/29/18 00:28	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 00:28	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 00:28	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 00:28	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		06/29/18 00:28	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 00:28	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 00:28	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 00:28	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 00:28	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		06/29/18 00:28	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		06/29/18 00:28	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 00:28	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 00:28	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		06/29/18 00:28	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		06/29/18 00:28	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		06/29/18 00:28	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1		06/29/18 00:28	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125		1		06/29/18 00:28	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

QC Batch: 547569 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437265001, 10437265002, 10437265003, 10437265004

METHOD BLANK: 2976583 Matrix: Water
Associated Lab Samples: 10437265001, 10437265002, 10437265003, 10437265004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/28/18 23:41	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	06/28/18 23:41	MN
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/28/18 23:41	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/28/18 23:41	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	10.0	1.7	06/28/18 23:41	MN
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	06/28/18 23:41	MN
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/28/18 23:41	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/28/18 23:41	
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/28/18 23:41	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/28/18 23:41	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/28/18 23:41	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/28/18 23:41	
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/28/18 23:41	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/28/18 23:41	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/28/18 23:41	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/28/18 23:41	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/28/18 23:41	
Acetone	ug/L	<9.2	20.0	9.2	06/28/18 23:41	
Acrolein	ug/L	<1.2	10.0	1.2	06/28/18 23:41	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/28/18 23:41	
Benzene	ug/L	<0.10	0.50	0.10	06/28/18 23:41	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/28/18 23:41	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/28/18 23:41	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/28/18 23:41	
Bromoform	ug/L	<0.80	4.0	0.80	06/28/18 23:41	
Bromomethane	ug/L	<1.8	4.0	1.8	06/28/18 23:41	CL
Carbon disulfide	ug/L	0.085J	1.0	0.078	06/28/18 23:41	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/28/18 23:41	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

METHOD BLANK: 2976583 Matrix: Water
Associated Lab Samples: 10437265001, 10437265002, 10437265003, 10437265004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
Chloroethane	ug/L	<0.49	1.0	0.49	06/28/18 23:41	
Chloroform	ug/L	<0.45	1.0	0.45	06/28/18 23:41	
Chloromethane	ug/L	<0.16	4.0	0.16	06/28/18 23:41	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/28/18 23:41	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/28/18 23:41	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/28/18 23:41	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/28/18 23:41	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/28/18 23:41	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/28/18 23:41	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/28/18 23:41	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/28/18 23:41	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/28/18 23:41	
Naphthalene	ug/L	<0.48	1.0	0.48	06/28/18 23:41	
o-Xylene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
Styrene	ug/L	<0.19	0.50	0.19	06/28/18 23:41	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/28/18 23:41	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/28/18 23:41	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/28/18 23:41	
Toluene	ug/L	<0.083	0.50	0.083	06/28/18 23:41	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/28/18 23:41	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/28/18 23:41	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/28/18 23:41	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/28/18 23:41	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/28/18 23:41	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/28/18 23:41	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/28/18 23:41	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		06/28/18 23:41	
4-Bromofluorobenzene (S)	%.	104	75-125		06/28/18 23:41	
Toluene-d8 (S)	%.	96	75-125		06/28/18 23:41	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

LABORATORY CONTROL SAMPLE & LCSD: 2976584 2976585

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.1	10.8	101	108	75-125	7	30	
1,1,1-Trichloroethane	ug/L	10	11.4	11.4	114	114	75-125	0	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.0	10.7	100	107	75-125	6	30	
1,1,2-Trichloroethane	ug/L	10	9.8	10.3	98	103	75-125	5	30	
1,1,2-Trichlorotrifluoroethane	ug/L	10	11.4	11.7	114	117	72-125	2	30	
1,1-Dichloroethane	ug/L	10	11.7	11.9	117	119	75-125	2	30	
1,1-Dichloroethene	ug/L	10	10.7	11.6	107	116	73-125	8	30	
1,1-Dichloropropene	ug/L	10	11.2	11.7	112	117	73-125	4	30	
1,2,3-Trichlorobenzene	ug/L	10	9.3	10.3	93	103	72-130	10	30	
1,2,3-Trichloropropane	ug/L	10	9.9	10.7	99	107	75-125	8	30	
1,2,4-Trichlorobenzene	ug/L	10	8.8	9.9	88	99	75-125	11	30	
1,2,4-Trimethylbenzene	ug/L	10	9.8	10.7	98	107	75-125	9	30	
1,2-Dibromo-3-chloropropane	ug/L	25	24.0	25.6	96	103	64-133	7	30	
1,2-Dibromoethane (EDB)	ug/L	10	9.8	10.4	98	104	75-125	6	30	
1,2-Dichlorobenzene	ug/L	10	10.1	10.9	101	109	75-125	7	30	
1,2-Dichloroethane	ug/L	10	10.1	11.3	101	113	75-125	11	30	
1,2-Dichloroethene (Total)	ug/L	20	21.7	22.9	109	114	75-125	5	30	
1,2-Dichloropropane	ug/L	10	10.5	10.9	105	109	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	10	10.5	11.2	105	112	75-125	6	30	
1,3-Dichlorobenzene	ug/L	10	10.2	11.2	102	112	75-125	9	30	
1,3-Dichloropropane	ug/L	10	10.7	11.3	107	113	75-125	6	30	
1,4-Dichlorobenzene	ug/L	10	10.0	10.9	100	109	75-125	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	200	181J	184J	90	92	75-125		30	
2,2,4-Trimethylpentane	ug/L	10	10.3	11.2	103	112	64-130	8	30	
2,2-Dichloropropane	ug/L	10	10.5	10.4	105	104	68-129	0	30	
2-Butanone (MEK)	ug/L	50	49.9	54.8	100	110	65-126	10	30	
2-Chlorotoluene	ug/L	10	10.3	11.3	103	113	75-125	9	30	
2-Hexanone	ug/L	50	49.8	52.3	100	105	75-134	5	30	
4-Chlorotoluene	ug/L	10	10.7	11.7	107	117	75-125	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.8	54.1	104	108	75-131	4	30	
Acetone	ug/L	50	58.5	64.7	117	129	68-150	10	30	
Acrolein	ug/L	100	117	117	117	117	63-149	0	30	
Acrylonitrile	ug/L	100	106	107	106	107	75-125	1	30	
Benzene	ug/L	10	11.0	11.8	110	118	75-125	7	30	
Bromobenzene	ug/L	10	10.0	11.2	100	112	75-125	12	30	
Bromochloromethane	ug/L	10	11.2	11.6	112	116	75-125	3	30	
Bromodichloromethane	ug/L	10	10.3	10.9	103	109	75-125	6	30	
Bromoform	ug/L	10	9.4	10	94	100	70-125	6	30	
Bromomethane	ug/L	10	4.5	5.1	45	51	30-145	11	30	CL
Carbon disulfide	ug/L	10	10.9	12.1	109	121	67-125	11	30	
Carbon tetrachloride	ug/L	10	11.0	11.5	110	115	75-125	4	30	
Chlorobenzene	ug/L	10	9.9	10.7	99	107	75-125	8	30	
Chloroethane	ug/L	10	12.8	12.4	128	124	73-131	3	30	
Chloroform	ug/L	10	10.8	10.9	108	109	75-125	1	30	
Chloromethane	ug/L	10	8.6	8.6	86	86	52-132	1	30	
cis-1,2-Dichloroethene	ug/L	10	10.5	10.8	105	108	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	10	9.8	10.3	98	103	75-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

LABORATORY CONTROL SAMPLE & LCSD: 2976584 2976585

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	10	10	10.4	100	104	75-125	4	30	
Dibromomethane	ug/L	10	9.7	10.2	97	102	75-125	5	30	
Dichlorodifluoromethane	ug/L	10	11.0	10.5	110	105	64-127	4	30	
Dichlorofluoromethane	ug/L	10	11.1	11.3	111	113	75-125	2	30	N2
Diisopropyl ether	ug/L	10	11.3	11.7	113	117	75-125	4	30	
Ethyl-tert-butyl ether	ug/L	10	10.9	11.3	109	113	75-125	3	30	
Ethylbenzene	ug/L	10	10.2	11.1	102	111	75-125	9	30	
Hexachloro-1,3-butadiene	ug/L	10	9.7	12.3	97	123	75-130	23	30	
Isopropylbenzene (Cumene)	ug/L	10	8.9	9.7	89	97	75-125	8	30	
m&p-Xylene	ug/L	20	19.4	21.4	97	107	75-125	10	30	
Methyl-tert-butyl ether	ug/L	10	11.0	11.3	110	113	75-125	3	30	
Methylene Chloride	ug/L	10	11.1	12.4	111	124	72-125	11	30	
n-Butylbenzene	ug/L	10	9.9	10.8	99	108	75-125	9	30	
n-Propylbenzene	ug/L	10	10.3	11.8	103	118	75-125	13	30	
Naphthalene	ug/L	10	9.0	10.4	90	104	61-136	15	30	
o-Xylene	ug/L	10	9.7	10.4	97	104	75-125	7	30	
p-Isopropyltoluene	ug/L	10	9.1	10.1	91	101	75-125	10	30	
sec-Butylbenzene	ug/L	10	9.6	10.5	96	105	75-125	9	30	
Styrene	ug/L	10	9.0	10	90	100	75-125	10	30	
tert-Amylmethyl ether	ug/L	10	10	11.1	100	111	75-125	11	30	
tert-Butyl Alcohol	ug/L	100	103	108	103	108	75-125	5	30	
tert-Butylbenzene	ug/L	10	10.3	10.9	103	109	75-125	6	30	
Tetrachloroethene	ug/L	10	10.0	10.4	100	104	75-125	4	30	
Tetrahydrofuran	ug/L	100	113	116	113	116	64-150	3	30	
Toluene	ug/L	10	9.6	10.2	96	102	75-125	6	30	
trans-1,2-Dichloroethene	ug/L	10	11.3	12.1	113	121	75-125	7	30	
trans-1,3-Dichloropropene	ug/L	10	9.7	10.6	97	106	75-125	9	30	
trans-1,4-Dichloro-2-butene	ug/L	25	22.6	22.4	90	90	57-126	1	30	
Trichloroethene	ug/L	10	10.7	11.6	107	116	75-125	8	30	
Trichlorofluoromethane	ug/L	10	11.9	11.6	119	116	74-126	3	30	
Vinyl acetate	ug/L	10	7.2J	7.2J	72	72	72-129		30	
Vinyl chloride	ug/L	10	11.3	10.9	113	109	71-130	4	30	
Xylene (Total)	ug/L	30	29.0	31.8	97	106	75-125	9	30	
1,2-Dichloroethane-d4 (S)	%.				103	105	75-125			
4-Bromofluorobenzene (S)	%.				104	108	75-125			
Toluene-d8 (S)	%.				102	101	75-125			

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20.3	102	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	24.7	124	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.0	105	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	24.4	122	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	24.4	122	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.4	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	22.8	114	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	19.7	98	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	19.4	97	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	19.1	96	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	21.3	107	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	44.3	89	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.3	101	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	21.1	105	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	21.3	106	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	45.2	113	75-125	
1,2-Dichloropropane	ug/L	<0.16	20	20.4	102	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	22.7	114	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	21.2	106	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	21.8	109	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	20.8	104	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	394	99	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	22.8	114	65-150	
2,2-Dichloropropane	ug/L	<0.17	20	22.9	114	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	94.3	94	59-125	
2-Chlorotoluene	ug/L	<0.16	20	22.1	111	73-126	
2-Hexanone	ug/L	<0.88	100	94.7	95	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	99.5	100	73-125	
Acetone	ug/L	<9.2	100	99.1	99	75-150	
Acrolein	ug/L	<1.2	200	219	110	53-150	
Acrylonitrile	ug/L	<0.91	200	218	109	69-127	
Benzene	ug/L	<0.10	20	23.5	118	74-125	
Bromobenzene	ug/L	<0.21	20	20.7	103	75-125	
Bromochloromethane	ug/L	<0.27	20	22.6	113	75-125	
Bromodichloromethane	ug/L	<0.22	20	20.7	104	75-125	
Bromoform	ug/L	<0.80	20	18.7	94	68-125	
Bromomethane	ug/L	<1.8	20	12.4	62	37-149	CL
Carbon disulfide	ug/L	0.10J	20	22.3	111	66-139	
Carbon tetrachloride	ug/L	<0.19	20	23.5	117	75-127	
Chlorobenzene	ug/L	<0.17	20	20.5	102	75-125	
Chloroethane	ug/L	<0.49	20	25.5	128	73-134	
Chloroform	ug/L	<0.45	20	21.0	105	71-125	
Chloromethane	ug/L	<0.16	20	18.4	92	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.5	108	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	19.4	97	71-125	
Dibromochloromethane	ug/L	<0.12	20	20.5	103	75-125	
Dibromomethane	ug/L	<0.16	20	18.1	91	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	24.1	121	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	23.8	119	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.8	114	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	22.6	113	74-125	
Ethylbenzene	ug/L	<0.14	20	21.6	108	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	23.2	116	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	19.9	99	75-125	
m&p-Xylene	ug/L	<0.31	40	41.2	103	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	22.1	110	75-125	
Methylene Chloride	ug/L	<0.98	20	21.6	108	72-125	
n-Butylbenzene	ug/L	<0.24	20	21.9	109	73-140	
n-Propylbenzene	ug/L	<0.10	20	22.5	112	75-126	
Naphthalene	ug/L	<0.48	20	18.5	93	61-136	
o-Xylene	ug/L	<0.16	20	20.7	103	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	19.6	98	73-133	
sec-Butylbenzene	ug/L	<0.15	20	20.5	103	75-132	
Styrene	ug/L	<0.19	20	19.1	95	71-125	
tert-Amylmethyl ether	ug/L	<0.11	20	22.2	111	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	201	101	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.0	110	75-126	
Tetrachloroethene	ug/L	<0.17	20	21.1	105	75-125	
Tetrahydrofuran	ug/L	<2.2	200	205	103	75-150	
Toluene	ug/L	<0.083	20	20.4	102	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	23.7	118	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	19.8	99	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	45.0	90	57-125	
Trichloroethene	ug/L	<0.15	20	21.0	105	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	24.8	124	75-135	
Vinyl acetate	ug/L	<1.1	20	17.5	87	57-136	
Vinyl chloride	ug/L	<0.092	20	22.8	114	74-141	
Xylene (Total)	ug/L	<0.31	60	61.9	103	75-125	
1,2-Dichloroethane-d4 (S)	%.				107	75-125	
4-Bromofluorobenzene (S)	%.				105	75-125	
Toluene-d8 (S)	%.				99	75-125	

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	CL
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	<0.19	<0.19		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	103	103	0		
4-Bromofluorobenzene (S)	%.	106	104	1		
Toluene-d8 (S)	%.	98	100	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 547569

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437265

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437265001	**062518-W26**	EPA 8260B	547569		
10437265002	**062518-MW13S**	EPA 8260B	547569		
10437265003	**062518-W20**	EPA 8260B	547569		
10437265004	**Trip Blank**	EPA 8260B	547569		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Do[cument]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b[e completed accurately.]

WO# : 10437265

10437265

Section A Required Client Information:

Company: CH2M Hill	
Address: 999 W. Riverside Ave, Suite 500	
Spokane, WA 99201	
Email:	
Phone:	Fax:
Requested Due Date: *10 Day Standard*	

Section B Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: Freeman WA-Grain Handling Facility
Project #: 1497

Section C Invoice Information:

Attention: Anne Walsh
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	**Chloride, Sulfate, Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062518-W26	WT	G	6/25	1430	—	—	—	3				X				X												001
2	062518-MW135	↓	↓	6/25	1630	—	—	—	3				X				X												002
3	062518-W20	↓	↓	6/25	1730	—	—	—	3				X				X												003
4	Trip Blank	WT	—	—	—	—	—	—	2				X				X												004
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/26/18	1530	Kyle / Pace	6/27/18	0925	2.1	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/25/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #:

WO# : 10437265

PM: JMG **Due Date: 07/05/18**

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7222 2739 8540

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.1 **Cooler Temp Corrected (°C):** 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** 6/27/18

USDA Regulated Soil (☒ N/A, ~~water sample~~**)**

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☒ Yes~~	☒ No 6/27/18		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No MS/MSD Requested/Provided
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. #1-2 >6mm, 1 No HS, 3 total; #2-1 >6mm, 2 No HS, 3 total
3 Trip Blanks Present?	~~☒ Yes~~	☒ No 6/27/18	☐ N/A	15. 2 Trip Blanks Provided
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 150954				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: Certs not required for 8260 224-TMP or dichlorodifluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1220	Temp: 2.1	Corrected Temp: 2.1
Time: 1250	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 06/27/18

Note: Whenever there is a discrepancy affecting North Carolina complian[ce] ... [thi]s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

July 02, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437268

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437268001	**062518-Marlow2**	Water	06/25/18 15:30	06/27/18 09:25

Pace Analytical Services, LLC
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(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437268001	**062518-Marlow2**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437268001	**062518-Marlow2**					
EPA 8260B	Carbon disulfide	0.22J	ug/L	1.0	06/29/18 07:09	B
EPA 8260B	Carbon tetrachloride	49.6	ug/L	1.0	06/30/18 09:28	
EPA 8260B	Chloroform	3.6	ug/L	1.0	06/29/18 07:09	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 02, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 547569

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- 062518-Marlow2 (Lab ID: 10437268001)
  - Bromomethane
- BLANK (Lab ID: 2976583)
  - Bromomethane
- DUP (Lab ID: 2976587)
  - Bromomethane
- LCS (Lab ID: 2976584)
  - Bromomethane
- LCSD (Lab ID: 2976585)
  - Bromomethane
- MS (Lab ID: 2976586)
  - Bromomethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 547569

B: Analyte was detected in the associated method blank.

- BLANK for HBN 547569 [MSV/4446 (Lab ID: 2976583)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 02, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547569

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 547569

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062518-Marlow2 (Lab ID: 10437268001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2976583)
  - Dichlorofluoromethane
- DUP (Lab ID: 2976587)
  - Dichlorofluoromethane
- LCS (Lab ID: 2976584)
  - Dichlorofluoromethane
- LCSD (Lab ID: 2976585)
  - Dichlorofluoromethane
- MS (Lab ID: 2976586)
  - Dichlorofluoromethane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Sample: 062518-Marlow2 **Lab ID: 10437268001** Collected: 06/25/18 15:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		06/29/18 07:09	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		06/29/18 07:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 07:09	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		06/29/18 07:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		06/29/18 07:09	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		06/29/18 07:09	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 07:09	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 07:09	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		06/29/18 07:09	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		06/29/18 07:09	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 07:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		06/29/18 07:09	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		06/29/18 07:09	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		06/29/18 07:09	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 07:09	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 07:09	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		06/29/18 07:09	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 07:09	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 07:09	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 07:09	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		06/29/18 07:09	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 07:09	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		06/29/18 07:09	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		06/29/18 07:09	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		06/29/18 07:09	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		06/29/18 07:09	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 07:09	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		06/29/18 07:09	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		06/29/18 07:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		06/29/18 07:09	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		06/29/18 07:09	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		06/29/18 07:09	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		06/29/18 07:09	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 07:09	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		06/29/18 07:09	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		06/29/18 07:09	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		06/29/18 07:09	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		06/29/18 07:09	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		06/29/18 07:09	74-83-9	CL
Carbon disulfide	**0.22J**	ug/L	1.0	0.078	1		06/29/18 07:09	75-15-0	B
Carbon tetrachloride	**49.6**	ug/L	1.0	0.38	2		06/30/18 09:28	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 07:09	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		06/29/18 07:09	75-00-3	
Chloroform	**3.6**	ug/L	1.0	0.45	1		06/29/18 07:09	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		06/29/18 07:09	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		06/29/18 07:09	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437268

Sample: 062518-Marlow2 **Lab ID: 10437268001** Collected: 06/25/18 15:30 Received: 06/27/18 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		06/29/18 07:09	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		06/29/18 07:09	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		06/29/18 07:09	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		06/29/18 07:09	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		06/29/18 07:09	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		06/29/18 07:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 07:09	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		06/29/18 07:09	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		06/29/18 07:09	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		06/29/18 07:09	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		06/29/18 07:09	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		06/29/18 07:09	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		06/29/18 07:09	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		06/29/18 07:09	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		06/29/18 07:09	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		06/29/18 07:09	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		06/29/18 07:09	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		06/29/18 07:09	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		06/29/18 07:09	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		06/29/18 07:09	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 07:09	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		06/29/18 07:09	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		06/29/18 07:09	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		06/29/18 07:09	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		06/29/18 07:09	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		06/29/18 07:09	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 07:09	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 07:09	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		06/29/18 07:09	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		06/29/18 07:09	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		06/29/18 07:09	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		06/29/18 07:09	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		06/29/18 07:09	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		06/29/18 07:09	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		06/29/18 07:09	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		06/29/18 07:09	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		06/29/18 07:09	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

QC Batch: 547569 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437268001

METHOD BLANK: 2976583 | Matrix: Water
Associated Lab Samples: 10437268001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/28/18 23:41	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	06/28/18 23:41	MN
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/28/18 23:41	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/28/18 23:41	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	10.0	1.7	06/28/18 23:41	MN
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	06/28/18 23:41	MN
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/28/18 23:41	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/28/18 23:41	
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/28/18 23:41	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/28/18 23:41	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/28/18 23:41	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/28/18 23:41	
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/28/18 23:41	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/28/18 23:41	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/28/18 23:41	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/28/18 23:41	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/28/18 23:41	
Acetone	ug/L	<9.2	20.0	9.2	06/28/18 23:41	
Acrolein	ug/L	<1.2	10.0	1.2	06/28/18 23:41	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/28/18 23:41	
Benzene	ug/L	<0.10	0.50	0.10	06/28/18 23:41	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/28/18 23:41	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/28/18 23:41	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/28/18 23:41	
Bromoform	ug/L	<0.80	4.0	0.80	06/28/18 23:41	
Bromomethane	ug/L	<1.8	4.0	1.8	06/28/18 23:41	CL
Carbon disulfide	ug/L	0.085J	1.0	0.078	06/28/18 23:41	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/28/18 23:41	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

METHOD BLANK: 2976583 Matrix: Water
Associated Lab Samples: 10437268001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
Chloroethane	ug/L	<0.49	1.0	0.49	06/28/18 23:41	
Chloroform	ug/L	<0.45	1.0	0.45	06/28/18 23:41	
Chloromethane	ug/L	<0.16	4.0	0.16	06/28/18 23:41	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	06/28/18 23:41	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/28/18 23:41	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/28/18 23:41	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/28/18 23:41	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/28/18 23:41	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/28/18 23:41	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/28/18 23:41	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	06/28/18 23:41	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/28/18 23:41	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/28/18 23:41	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/28/18 23:41	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/28/18 23:41	
Naphthalene	ug/L	<0.48	1.0	0.48	06/28/18 23:41	
o-Xylene	ug/L	<0.16	0.50	0.16	06/28/18 23:41	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
Styrene	ug/L	<0.19	0.50	0.19	06/28/18 23:41	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/28/18 23:41	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/28/18 23:41	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/28/18 23:41	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/28/18 23:41	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/28/18 23:41	
Toluene	ug/L	<0.083	0.50	0.083	06/28/18 23:41	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/28/18 23:41	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/28/18 23:41	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/28/18 23:41	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/28/18 23:41	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/28/18 23:41	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/28/18 23:41	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/28/18 23:41	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/28/18 23:41	
1,2-Dichloroethane-d4 (S)	%.	105	75-125		06/28/18 23:41	
4-Bromofluorobenzene (S)	%.	104	75-125		06/28/18 23:41	
Toluene-d8 (S)	%.	96	75-125		06/28/18 23:41	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

LABORATORY CONTROL SAMPLE & LCSD: 2976584 2976585

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.1	10.8	101	108	75-125	7	30	
1,1,1-Trichloroethane	ug/L	10	11.4	11.4	114	114	75-125	0	30	
1,1,2,2-Tetrachloroethane	ug/L	10	10.0	10.7	100	107	75-125	6	30	
1,1,2-Trichloroethane	ug/L	10	9.8	10.3	98	103	75-125	5	30	
1,1,2-Trichlorotrifluoroethane	ug/L	10	11.4	11.7	114	117	72-125	2	30	
1,1-Dichloroethane	ug/L	10	11.7	11.9	117	119	75-125	2	30	
1,1-Dichloroethene	ug/L	10	10.7	11.6	107	116	73-125	8	30	
1,1-Dichloropropene	ug/L	10	11.2	11.7	112	117	73-125	4	30	
1,2,3-Trichlorobenzene	ug/L	10	9.3	10.3	93	103	72-130	10	30	
1,2,3-Trichloropropane	ug/L	10	9.9	10.7	99	107	75-125	8	30	
1,2,4-Trichlorobenzene	ug/L	10	8.8	9.9	88	99	75-125	11	30	
1,2,4-Trimethylbenzene	ug/L	10	9.8	10.7	98	107	75-125	9	30	
1,2-Dibromo-3-chloropropane	ug/L	25	24.0	25.6	96	103	64-133	7	30	
1,2-Dibromoethane (EDB)	ug/L	10	9.8	10.4	98	104	75-125	6	30	
1,2-Dichlorobenzene	ug/L	10	10.1	10.9	101	109	75-125	7	30	
1,2-Dichloroethane	ug/L	10	10.1	11.3	101	113	75-125	11	30	
1,2-Dichloroethene (Total)	ug/L	20	21.7	22.9	109	114	75-125	5	30	
1,2-Dichloropropane	ug/L	10	10.5	10.9	105	109	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	10	10.5	11.2	105	112	75-125	6	30	
1,3-Dichlorobenzene	ug/L	10	10.2	11.2	102	112	75-125	9	30	
1,3-Dichloropropane	ug/L	10	10.7	11.3	107	113	75-125	6	30	
1,4-Dichlorobenzene	ug/L	10	10.0	10.9	100	109	75-125	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	200	181J	184J	90	92	75-125		30	
2,2,4-Trimethylpentane	ug/L	10	10.3	11.2	103	112	64-130	8	30	
2,2-Dichloropropane	ug/L	10	10.5	10.4	105	104	68-129	0	30	
2-Butanone (MEK)	ug/L	50	49.9	54.8	100	110	65-126	10	30	
2-Chlorotoluene	ug/L	10	10.3	11.3	103	113	75-125	9	30	
2-Hexanone	ug/L	50	49.8	52.3	100	105	75-134	5	30	
4-Chlorotoluene	ug/L	10	10.7	11.7	107	117	75-125	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.8	54.1	104	108	75-131	4	30	
Acetone	ug/L	50	58.5	64.7	117	129	68-150	10	30	
Acrolein	ug/L	100	117	117	117	117	63-149	0	30	
Acrylonitrile	ug/L	100	106	107	106	107	75-125	1	30	
Benzene	ug/L	10	11.0	11.8	110	118	75-125	7	30	
Bromobenzene	ug/L	10	10.0	11.2	100	112	75-125	12	30	
Bromochloromethane	ug/L	10	11.2	11.6	112	116	75-125	3	30	
Bromodichloromethane	ug/L	10	10.3	10.9	103	109	75-125	6	30	
Bromoform	ug/L	10	9.4	10	94	100	70-125	6	30	
Bromomethane	ug/L	10	4.5	5.1	45	51	30-145	11	30	CL
Carbon disulfide	ug/L	10	10.9	12.1	109	121	67-125	11	30	
Carbon tetrachloride	ug/L	10	11.0	11.5	110	115	75-125	4	30	
Chlorobenzene	ug/L	10	9.9	10.7	99	107	75-125	8	30	
Chloroethane	ug/L	10	12.8	12.4	128	124	73-131	3	30	
Chloroform	ug/L	10	10.8	10.9	108	109	75-125	1	30	
Chloromethane	ug/L	10	8.6	8.6	86	86	52-132	1	30	
cis-1,2-Dichloroethene	ug/L	10	10.5	10.8	105	108	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	10	9.8	10.3	98	103	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

LABORATORY CONTROL SAMPLE & LCSD: 2976584 2976585

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	10	10	10.4	100	104	75-125	4	30	
Dibromomethane	ug/L	10	9.7	10.2	97	102	75-125	5	30	
Dichlorodifluoromethane	ug/L	10	11.0	10.5	110	105	64-127	4	30	
Dichlorofluoromethane	ug/L	10	11.1	11.3	111	113	75-125	2	30	N2
Diisopropyl ether	ug/L	10	11.3	11.7	113	117	75-125	4	30	
Ethyl-tert-butyl ether	ug/L	10	10.9	11.3	109	113	75-125	3	30	
Ethylbenzene	ug/L	10	10.2	11.1	102	111	75-125	9	30	
Hexachloro-1,3-butadiene	ug/L	10	9.7	12.3	97	123	75-130	23	30	
Isopropylbenzene (Cumene)	ug/L	10	8.9	9.7	89	97	75-125	8	30	
m&p-Xylene	ug/L	20	19.4	21.4	97	107	75-125	10	30	
Methyl-tert-butyl ether	ug/L	10	11.0	11.3	110	113	75-125	3	30	
Methylene Chloride	ug/L	10	11.1	12.4	111	124	72-125	11	30	
n-Butylbenzene	ug/L	10	9.9	10.8	99	108	75-125	9	30	
n-Propylbenzene	ug/L	10	10.3	11.8	103	118	75-125	13	30	
Naphthalene	ug/L	10	9.0	10.4	90	104	61-136	15	30	
o-Xylene	ug/L	10	9.7	10.4	97	104	75-125	7	30	
p-Isopropyltoluene	ug/L	10	9.1	10.1	91	101	75-125	10	30	
sec-Butylbenzene	ug/L	10	9.6	10.5	96	105	75-125	9	30	
Styrene	ug/L	10	9.0	10	90	100	75-125	10	30	
tert-Amylmethyl ether	ug/L	10	10	11.1	100	111	75-125	11	30	
tert-Butyl Alcohol	ug/L	100	103	108	103	108	75-125	5	30	
tert-Butylbenzene	ug/L	10	10.3	10.9	103	109	75-125	6	30	
Tetrachloroethene	ug/L	10	10.0	10.4	100	104	75-125	4	30	
Tetrahydrofuran	ug/L	100	113	116	113	116	64-150	3	30	
Toluene	ug/L	10	9.6	10.2	96	102	75-125	6	30	
trans-1,2-Dichloroethene	ug/L	10	11.3	12.1	113	121	75-125	7	30	
trans-1,3-Dichloropropene	ug/L	10	9.7	10.6	97	106	75-125	9	30	
trans-1,4-Dichloro-2-butene	ug/L	25	22.6	22.4	90	90	57-126	1	30	
Trichloroethene	ug/L	10	10.7	11.6	107	116	75-125	8	30	
Trichlorofluoromethane	ug/L	10	11.9	11.6	119	116	74-126	3	30	
Vinyl acetate	ug/L	10	7.2J	7.2J	72	72	72-129		30	
Vinyl chloride	ug/L	10	11.3	10.9	113	109	71-130	4	30	
Xylene (Total)	ug/L	30	29.0	31.8	97	106	75-125	9	30	
1,2-Dichloroethane-d4 (S)	%.				103	105	75-125			
4-Bromofluorobenzene (S)	%.				104	108	75-125			
Toluene-d8 (S)	%.				102	101	75-125			

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20.3	102	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	24.7	124	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.0	105	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	24.4	122	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	24.4	122	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.4	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	22.8	114	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	19.7	98	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	19.4	97	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	19.1	96	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	21.3	107	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	44.3	89	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.3	101	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	21.1	105	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	21.3	106	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	45.2	113	75-125	
1,2-Dichloropropane	ug/L	<0.16	20	20.4	102	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	22.7	114	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	21.2	106	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	21.8	109	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	20.8	104	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	394	99	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	22.8	114	65-150	
2,2-Dichloropropane	ug/L	<0.17	20	22.9	114	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	94.3	94	59-125	
2-Chlorotoluene	ug/L	<0.16	20	22.1	111	73-126	
2-Hexanone	ug/L	<0.88	100	94.7	95	68-138	
4-Chlorotoluene	ug/L	<0.13	20	22.6	113	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	99.5	100	73-125	
Acetone	ug/L	<9.2	100	99.1	99	75-150	
Acrolein	ug/L	<1.2	200	219	110	53-150	
Acrylonitrile	ug/L	<0.91	200	218	109	69-127	
Benzene	ug/L	<0.10	20	23.5	118	74-125	
Bromobenzene	ug/L	<0.21	20	20.7	103	75-125	
Bromochloromethane	ug/L	<0.27	20	22.6	113	75-125	
Bromodichloromethane	ug/L	<0.22	20	20.7	104	75-125	
Bromoform	ug/L	<0.80	20	18.7	94	68-125	
Bromomethane	ug/L	<1.8	20	12.4	62	37-149	CL
Carbon disulfide	ug/L	0.10J	20	22.3	111	66-139	
Carbon tetrachloride	ug/L	<0.19	20	23.5	117	75-127	
Chlorobenzene	ug/L	<0.17	20	20.5	102	75-125	
Chloroethane	ug/L	<0.49	20	25.5	128	73-134	
Chloroform	ug/L	<0.45	20	21.0	105	71-125	
Chloromethane	ug/L	<0.16	20	18.4	92	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.5	108	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	19.4	97	71-125	
Dibromochloromethane	ug/L	<0.12	20	20.5	103	75-125	
Dibromomethane	ug/L	<0.16	20	18.1	91	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	24.1	121	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	23.8	119	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.8	114	66-131	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

MATRIX SPIKE SAMPLE: 2976586

Parameter	Units	10437233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	22.6	113	74-125	
Ethylbenzene	ug/L	<0.14	20	21.6	108	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	23.2	116	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	19.9	99	75-125	
m&p-Xylene	ug/L	<0.31	40	41.2	103	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	22.1	110	75-125	
Methylene Chloride	ug/L	<0.98	20	21.6	108	72-125	
n-Butylbenzene	ug/L	<0.24	20	21.9	109	73-140	
n-Propylbenzene	ug/L	<0.10	20	22.5	112	75-126	
Naphthalene	ug/L	<0.48	20	18.5	93	61-136	
o-Xylene	ug/L	<0.16	20	20.7	103	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	19.6	98	73-133	
sec-Butylbenzene	ug/L	<0.15	20	20.5	103	75-132	
Styrene	ug/L	<0.19	20	19.1	95	71-125	
tert-Amylmethyl ether	ug/L	<0.11	20	22.2	111	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	201	101	72-130	
tert-Butylbenzene	ug/L	<0.15	20	22.0	110	75-126	
Tetrachloroethene	ug/L	<0.17	20	21.1	105	75-125	
Tetrahydrofuran	ug/L	<2.2	200	205	103	75-150	
Toluene	ug/L	<0.083	20	20.4	102	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	23.7	118	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	19.8	99	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	45.0	90	57-125	
Trichloroethene	ug/L	<0.15	20	21.0	105	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	24.8	124	75-135	
Vinyl acetate	ug/L	<1.1	20	17.5	87	57-136	
Vinyl chloride	ug/L	<0.092	20	22.8	114	74-141	
Xylene (Total)	ug/L	<0.31	60	61.9	103	75-125	
1,2-Dichloroethane-d4 (S)	%.				107	75-125	
4-Bromofluorobenzene (S)	%.				105	75-125	
Toluene-d8 (S)	%.				99	75-125	

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	CL
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	<0.19	<0.19		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

SAMPLE DUPLICATE: 2976587

Parameter	Units	10437233002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	103	103	0		
4-Bromofluorobenzene (S)	%.	106	104	1		
Toluene-d8 (S)	%.	98	100	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437268

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 547569

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437268

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437268001	**062518-Marlow2**	EPA 8260B	547569		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Docu

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be

WO# : 10437268

10437268

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	CH2M Hill	Report To:	Mark Ochsner, Brad Ostapkowicz	Attention:	Anne Walsh
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To:	Steve Demus, Lindsey Baumann	Company:	UPRR
		Copy To:	David Hodson, UPRR-Sysdat@ghd.com	Address:	1400 W. 52nd Ave, Denver, CO 80221
Email:		Purchase Order #	PEDD# 1497	Pace Quote:	Contract# 758938
Phone:	Fax:	Project Name:	Freeman WA-Grain Handling Facility	Pace Project Manager:	Jennifer Gross
Requested Due Date:	*10 Day Standard*	Project #:	1497	Pace Profile #:	*36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062518_MarlowZ	WT	G	6/25	1530	–	–	–	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/26/18	1530	Kyle / Pace	6/27/18	0925	2.1	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/25/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #: WO#: 10437268

PM: JMG Due Date: 07/05/18

CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7222 2739 6540

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☒Other: PB **Temp Blank?** ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 2.1 **Cooler Temp Corrected (°C):** 2.1 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** 6/27/18

USDA Regulated Soil (☒N/A, ~~water sample~~**)**

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	~~☒Yes~~	☒No 6/27/18		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8. No MS/MSD Requested/Provided
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS · Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14.
3 Trip Blanks Present?	☐Yes	☒No 6/27/18	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐Yes ☐No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: Certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1220	Temp: 2.1	Corrected Temp: 2.1
Time: 1250	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 06/27/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce … th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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July 06, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Soil Sampling
Pace Project No.: 10437471

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Soil Sampling
Pace Project No.:	10437471

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437471001	**PH-01**	Solid	06/27/18 13:15	06/28/18 11:35
10437471002	**PH-02**	Solid	06/27/18 13:25	06/28/18 11:35
10437471003	**PH-03**	Solid	06/27/18 13:40	06/28/18 11:35
10437471004	**PH-04**	Solid	06/27/18 13:50	06/28/18 11:35
10437471005	**PH-05**	Solid	06/27/18 14:05	06/28/18 11:35
10437471006	**PH-06**	Solid	06/27/18 14:10	06/28/18 11:35
10437471007	**PH-07**	Solid	06/27/18 14:25	06/28/18 11:35
10437471008	**Trip Blank**	Solid	06/27/18 00:00	06/28/18 11:35
10437471009	**PH-08**	Solid	06/27/18 14:35	06/28/18 11:35

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SAMPLE ANALYTE COUNT

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437471001	**PH-01**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471002	**PH-02**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471003	**PH-03**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471004	**PH-04**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471005	**PH-05**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471006	**PH-06**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471007	**PH-07**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10437471008	**Trip Blank**	EPA 8260B	CD2	51	PASI-M
10437471009	**PH-08**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437471001	**PH-01**					
ASTM D2974	Percent Moisture	41.9	%	0.10	06/29/18 12:16	
EPA 8260B	Toluene	0.094	mg/kg	0.083	07/05/18 16:40	
10437471002	**PH-02**					
ASTM D2974	Percent Moisture	18.3	%	0.10	06/29/18 12:16	
EPA 8260B	1,2,4-Trimethylbenzene	0.012J	mg/kg	0.059	07/05/18 16:57	
EPA 8260B	Naphthalene	0.018J	mg/kg	0.24	07/05/18 16:57	
EPA 8260B	m&p-Xylene	0.011J	mg/kg	0.12	07/05/18 16:57	
10437471003	**PH-03**					
ASTM D2974	Percent Moisture	21.0	%	0.10	06/29/18 12:16	
EPA 8260B	1,2,4-Trimethylbenzene	0.0063J	mg/kg	0.064	07/05/18 17:14	
EPA 8260B	Carbon tetrachloride	0.073	mg/kg	0.064	07/05/18 17:14	
EPA 8260B	Naphthalene	0.0076J	mg/kg	0.26	07/05/18 17:14	
EPA 8260B	Toluene	0.24	mg/kg	0.064	07/05/18 17:14	
10437471004	**PH-04**					
ASTM D2974	Percent Moisture	6.4	%	0.10	06/29/18 12:17	
EPA 8260B	1,2,4-Trimethylbenzene	0.028J	mg/kg	0.051	07/05/18 17:31	
EPA 8260B	1,3,5-Trimethylbenzene	0.0066J	mg/kg	0.051	07/05/18 17:31	
EPA 8260B	Benzene	0.020J	mg/kg	0.020	07/05/18 17:31	
EPA 8260B	Ethylbenzene	0.0099J	mg/kg	0.051	07/05/18 17:31	
EPA 8260B	Naphthalene	0.028J	mg/kg	0.20	07/05/18 17:31	
EPA 8260B	Toluene	0.065	mg/kg	0.051	07/05/18 17:31	
EPA 8260B	m&p-Xylene	0.059J	mg/kg	0.10	07/05/18 17:31	
EPA 8260B	o-Xylene	0.030J	mg/kg	0.051	07/05/18 17:31	
10437471005	**PH-05**					
ASTM D2974	Percent Moisture	8.1	%	0.10	06/29/18 12:17	
EPA 8260B	Toluene	0.088	mg/kg	0.054	07/05/18 17:48	
EPA 8260B	m&p-Xylene	0.022J	mg/kg	0.11	07/05/18 17:48	
10437471006	**PH-06**					
ASTM D2974	Percent Moisture	13.3	%	0.10	06/29/18 12:17	
EPA 8260B	1,2,4-Trimethylbenzene	0.014J	mg/kg	0.057	07/05/18 18:05	
EPA 8260B	1,3,5-Trimethylbenzene	0.0057J	mg/kg	0.057	07/05/18 18:05	
EPA 8260B	Toluene	0.0050J	mg/kg	0.057	07/05/18 18:05	
EPA 8260B	m&p-Xylene	0.010J	mg/kg	0.11	07/05/18 18:05	
10437471007	**PH-07**					
ASTM D2974	Percent Moisture	17.7	%	0.10	06/29/18 12:17	
10437471009	**PH-08**					
ASTM D2974	Percent Moisture	17.3	%	0.10	06/29/18 15:27	

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PROJECT NARRATIVE

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: July 06, 2018

General Information:
9 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548703

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 548703

1M: Preserved from glass jar with headspace outside of 48 hours from collection.

- PH-05 (Lab ID: 10437471005)
  - 1,2-Dichloroethane-d4 (S)

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-01 **Lab ID: 10437471001** Collected: 06/27/18 13:15 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**41.9**	%	0.10	0.10	1		06/29/18 12:16		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0087**	mg/kg	0.33	0.0087	1	07/05/18 13:09	07/05/18 16:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0087**	mg/kg	0.083	0.0087	1	07/05/18 13:09	07/05/18 16:40	79-34-5	
1,1,2-Trichloroethane	**<0.014**	mg/kg	0.083	0.014	1	07/05/18 13:09	07/05/18 16:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0089**	mg/kg	0.33	0.0089	1	07/05/18 13:09	07/05/18 16:40	76-13-1	
1,1-Dichloroethane	**<0.032**	mg/kg	0.083	0.032	1	07/05/18 13:09	07/05/18 16:40	75-34-3	
1,1-Dichloroethene	**<0.015**	mg/kg	0.083	0.015	1	07/05/18 13:09	07/05/18 16:40	75-35-4	
1,2,4-Trichlorobenzene	**<0.016**	mg/kg	0.083	0.016	1	07/05/18 13:09	07/05/18 16:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.0043**	mg/kg	0.083	0.0043	1	07/05/18 13:09	07/05/18 16:40	95-63-6	
1,2-Dibromoethane (EDB)	**<0.020**	mg/kg	0.083	0.020	1	07/05/18 13:09	07/05/18 16:40	106-93-4	
1,2-Dichlorobenzene	**<0.0042**	mg/kg	0.083	0.0042	1	07/05/18 13:09	07/05/18 16:40	95-50-1	
1,2-Dichloroethane	**<0.015**	mg/kg	0.083	0.015	1	07/05/18 13:09	07/05/18 16:40	107-06-2	
1,3,5-Trimethylbenzene	**<0.0045**	mg/kg	0.083	0.0045	1	07/05/18 13:09	07/05/18 16:40	108-67-8	
1,3-Dichlorobenzene	**<0.0032**	mg/kg	0.083	0.0032	1	07/05/18 13:09	07/05/18 16:40	541-73-1	
1,4-Dichlorobenzene	**<0.0054**	mg/kg	0.083	0.0054	1	07/05/18 13:09	07/05/18 16:40	106-46-7	
2-Butanone (MEK)	**<0.067**	mg/kg	0.42	0.067	1	07/05/18 13:09	07/05/18 16:40	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.42	0.014	1	07/05/18 13:09	07/05/18 16:40	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.021**	mg/kg	0.42	0.021	1	07/05/18 13:09	07/05/18 16:40	108-10-1	
Acetone	**<0.15**	mg/kg	4.2	0.15	1	07/05/18 13:09	07/05/18 16:40	67-64-1	
Benzene	**<0.0054**	mg/kg	0.033	0.0054	1	07/05/18 13:09	07/05/18 16:40	71-43-2	
Bromodichloromethane	**<0.0092**	mg/kg	0.083	0.0092	1	07/05/18 13:09	07/05/18 16:40	75-27-4	
Bromoform	**<0.017**	mg/kg	0.83	0.017	1	07/05/18 13:09	07/05/18 16:40	75-25-2	
Bromomethane	**<0.016**	mg/kg	0.83	0.016	1	07/05/18 13:09	07/05/18 16:40	74-83-9	
Carbon tetrachloride	**<0.0083**	mg/kg	0.083	0.0083	1	07/05/18 13:09	07/05/18 16:40	56-23-5	
Chlorobenzene	**<0.0051**	mg/kg	0.083	0.0051	1	07/05/18 13:09	07/05/18 16:40	108-90-7	
Chloroethane	**<0.040**	mg/kg	0.83	0.040	1	07/05/18 13:09	07/05/18 16:40	75-00-3	
Chloroform	**<0.034**	mg/kg	0.083	0.034	1	07/05/18 13:09	07/05/18 16:40	67-66-3	
Chloromethane	**<0.032**	mg/kg	0.33	0.032	1	07/05/18 13:09	07/05/18 16:40	74-87-3	
Dibromochloromethane	**<0.0072**	mg/kg	0.33	0.0072	1	07/05/18 13:09	07/05/18 16:40	124-48-1	
Dichlorodifluoromethane	**<0.031**	mg/kg	0.33	0.031	1	07/05/18 13:09	07/05/18 16:40	75-71-8	
Ethylbenzene	**<0.0045**	mg/kg	0.083	0.0045	1	07/05/18 13:09	07/05/18 16:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.023**	mg/kg	0.42	0.023	1	07/05/18 13:09	07/05/18 16:40	87-68-3	
Methyl-tert-butyl ether	**<0.0044**	mg/kg	0.083	0.0044	1	07/05/18 13:09	07/05/18 16:40	1634-04-4	
Methylene Chloride	**<0.038**	mg/kg	0.33	0.038	1	07/05/18 13:09	07/05/18 16:40	75-09-2	
Naphthalene	**<0.0086**	mg/kg	0.33	0.0086	1	07/05/18 13:09	07/05/18 16:40	91-20-3	
Styrene	**<0.0050**	mg/kg	0.083	0.0050	1	07/05/18 13:09	07/05/18 16:40	100-42-5	
Tetrachloroethene	**<0.016**	mg/kg	0.083	0.016	1	07/05/18 13:09	07/05/18 16:40	127-18-4	
Tetrahydrofuran	**<0.11**	mg/kg	3.3	0.11	1	07/05/18 13:09	07/05/18 16:40	109-99-9	
Toluene	**0.094**	mg/kg	0.083	0.0067	1	07/05/18 13:09	07/05/18 16:40	108-88-3	
Trichloroethene	**<0.0095**	mg/kg	0.083	0.0095	1	07/05/18 13:09	07/05/18 16:40	79-01-6	
Trichlorofluoromethane	**<0.029**	mg/kg	0.33	0.029	1	07/05/18 13:09	07/05/18 16:40	75-69-4	
Vinyl acetate	**<0.010**	mg/kg	0.83	0.010	1	07/05/18 13:09	07/05/18 16:40	108-05-4	
Vinyl chloride	**<0.011**	mg/kg	0.033	0.011	1	07/05/18 13:09	07/05/18 16:40	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-01 **Lab ID: 10437471001** Collected: 06/27/18 13:15 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.014**	mg/kg	0.083	0.014	1	07/05/18 13:09	07/05/18 16:40	156-59-2	
cis-1,3-Dichloropropene	**<0.016**	mg/kg	0.083	0.016	1	07/05/18 13:09	07/05/18 16:40	10061-01-5	
m&p-Xylene	**<0.011**	mg/kg	0.17	0.011	1	07/05/18 13:09	07/05/18 16:40	179601-23-1	
o-Xylene	**<0.0058**	mg/kg	0.083	0.0058	1	07/05/18 13:09	07/05/18 16:40	95-47-6	
trans-1,2-Dichloroethene	**<0.016**	mg/kg	0.083	0.016	1	07/05/18 13:09	07/05/18 16:40	156-60-5	
trans-1,3-Dichloropropene	**<0.0083**	mg/kg	0.083	0.0083	1	07/05/18 13:09	07/05/18 16:40	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 16:40	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 16:40	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1	07/05/18 13:09	07/05/18 16:40	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-02 **Lab ID: 10437471002** Collected: 06/27/18 13:25 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.3**	%	0.10	0.10	1		06/29/18 12:16		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0062**	mg/kg	0.24	0.0062	1	07/05/18 13:09	07/05/18 16:57	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0062**	mg/kg	0.059	0.0062	1	07/05/18 13:09	07/05/18 16:57	79-34-5	
1,1,2-Trichloroethane	**<0.0099**	mg/kg	0.059	0.0099	1	07/05/18 13:09	07/05/18 16:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0063**	mg/kg	0.24	0.0063	1	07/05/18 13:09	07/05/18 16:57	76-13-1	
1,1-Dichloroethane	**<0.023**	mg/kg	0.059	0.023	1	07/05/18 13:09	07/05/18 16:57	75-34-3	
1,1-Dichloroethene	**<0.011**	mg/kg	0.059	0.011	1	07/05/18 13:09	07/05/18 16:57	75-35-4	
1,2,4-Trichlorobenzene	**<0.012**	mg/kg	0.059	0.012	1	07/05/18 13:09	07/05/18 16:57	120-82-1	
1,2,4-Trimethylbenzene	**0.012J**	mg/kg	0.059	0.0031	1	07/05/18 13:09	07/05/18 16:57	95-63-6	
1,2-Dibromoethane (EDB)	**<0.014**	mg/kg	0.059	0.014	1	07/05/18 13:09	07/05/18 16:57	106-93-4	
1,2-Dichlorobenzene	**<0.0030**	mg/kg	0.059	0.0030	1	07/05/18 13:09	07/05/18 16:57	95-50-1	
1,2-Dichloroethane	**<0.011**	mg/kg	0.059	0.011	1	07/05/18 13:09	07/05/18 16:57	107-06-2	
1,3,5-Trimethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	07/05/18 13:09	07/05/18 16:57	108-67-8	
1,3-Dichlorobenzene	**<0.0023**	mg/kg	0.059	0.0023	1	07/05/18 13:09	07/05/18 16:57	541-73-1	
1,4-Dichlorobenzene	**<0.0039**	mg/kg	0.059	0.0039	1	07/05/18 13:09	07/05/18 16:57	106-46-7	
2-Butanone (MEK)	**<0.048**	mg/kg	0.30	0.048	1	07/05/18 13:09	07/05/18 16:57	78-93-3	
2-Hexanone	**<0.010**	mg/kg	0.30	0.010	1	07/05/18 13:09	07/05/18 16:57	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.015**	mg/kg	0.30	0.015	1	07/05/18 13:09	07/05/18 16:57	108-10-1	
Acetone	**<0.11**	mg/kg	3.0	0.11	1	07/05/18 13:09	07/05/18 16:57	67-64-1	
Benzene	**<0.0038**	mg/kg	0.024	0.0038	1	07/05/18 13:09	07/05/18 16:57	71-43-2	
Bromodichloromethane	**<0.0066**	mg/kg	0.059	0.0066	1	07/05/18 13:09	07/05/18 16:57	75-27-4	
Bromoform	**<0.012**	mg/kg	0.59	0.012	1	07/05/18 13:09	07/05/18 16:57	75-25-2	
Bromomethane	**<0.011**	mg/kg	0.59	0.011	1	07/05/18 13:09	07/05/18 16:57	74-83-9	
Carbon tetrachloride	**<0.0059**	mg/kg	0.059	0.0059	1	07/05/18 13:09	07/05/18 16:57	56-23-5	
Chlorobenzene	**<0.0036**	mg/kg	0.059	0.0036	1	07/05/18 13:09	07/05/18 16:57	108-90-7	
Chloroethane	**<0.028**	mg/kg	0.59	0.028	1	07/05/18 13:09	07/05/18 16:57	75-00-3	
Chloroform	**<0.024**	mg/kg	0.059	0.024	1	07/05/18 13:09	07/05/18 16:57	67-66-3	
Chloromethane	**<0.023**	mg/kg	0.24	0.023	1	07/05/18 13:09	07/05/18 16:57	74-87-3	
Dibromochloromethane	**<0.0052**	mg/kg	0.24	0.0052	1	07/05/18 13:09	07/05/18 16:57	124-48-1	
Dichlorodifluoromethane	**<0.022**	mg/kg	0.24	0.022	1	07/05/18 13:09	07/05/18 16:57	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	07/05/18 13:09	07/05/18 16:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.016**	mg/kg	0.30	0.016	1	07/05/18 13:09	07/05/18 16:57	87-68-3	
Methyl-tert-butyl ether	**<0.0031**	mg/kg	0.059	0.0031	1	07/05/18 13:09	07/05/18 16:57	1634-04-4	
Methylene Chloride	**<0.027**	mg/kg	0.24	0.027	1	07/05/18 13:09	07/05/18 16:57	75-09-2	
Naphthalene	**0.018J**	mg/kg	0.24	0.0062	1	07/05/18 13:09	07/05/18 16:57	91-20-3	
Styrene	**<0.0036**	mg/kg	0.059	0.0036	1	07/05/18 13:09	07/05/18 16:57	100-42-5	
Tetrachloroethene	**<0.011**	mg/kg	0.059	0.011	1	07/05/18 13:09	07/05/18 16:57	127-18-4	
Tetrahydrofuran	**<0.082**	mg/kg	2.4	0.082	1	07/05/18 13:09	07/05/18 16:57	109-99-9	
Toluene	**<0.0048**	mg/kg	0.059	0.0048	1	07/05/18 13:09	07/05/18 16:57	108-88-3	
Trichloroethene	**<0.0068**	mg/kg	0.059	0.0068	1	07/05/18 13:09	07/05/18 16:57	79-01-6	
Trichlorofluoromethane	**<0.020**	mg/kg	0.24	0.020	1	07/05/18 13:09	07/05/18 16:57	75-69-4	
Vinyl acetate	**<0.0072**	mg/kg	0.59	0.0072	1	07/05/18 13:09	07/05/18 16:57	108-05-4	
Vinyl chloride	**<0.0077**	mg/kg	0.024	0.0077	1	07/05/18 13:09	07/05/18 16:57	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-02 **Lab ID: 10437471002** Collected: 06/27/18 13:25 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0098**	mg/kg	0.059	0.0098	1	07/05/18 13:09	07/05/18 16:57	156-59-2	
cis-1,3-Dichloropropene	**<0.011**	mg/kg	0.059	0.011	1	07/05/18 13:09	07/05/18 16:57	10061-01-5	
m&p-Xylene	**0.011J**	mg/kg	0.12	0.0081	1	07/05/18 13:09	07/05/18 16:57	179601-23-1	
o-Xylene	**<0.0042**	mg/kg	0.059	0.0042	1	07/05/18 13:09	07/05/18 16:57	95-47-6	
trans-1,2-Dichloroethene	**<0.011**	mg/kg	0.059	0.011	1	07/05/18 13:09	07/05/18 16:57	156-60-5	
trans-1,3-Dichloropropene	**<0.0059**	mg/kg	0.059	0.0059	1	07/05/18 13:09	07/05/18 16:57	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%.	75-125		1	07/05/18 13:09	07/05/18 16:57	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	07/05/18 13:09	07/05/18 16:57	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 16:57	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-03 **Lab ID: 10437471003** Collected: 06/27/18 13:40 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**21.0**	%	0.10	0.10	1		06/29/18 12:16		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0067**	mg/kg	0.26	0.0067	1	07/05/18 13:09	07/05/18 17:14	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0067**	mg/kg	0.064	0.0067	1	07/05/18 13:09	07/05/18 17:14	79-34-5	
1,1,2-Trichloroethane	**<0.011**	mg/kg	0.064	0.011	1	07/05/18 13:09	07/05/18 17:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0068**	mg/kg	0.26	0.0068	1	07/05/18 13:09	07/05/18 17:14	76-13-1	
1,1-Dichloroethane	**<0.025**	mg/kg	0.064	0.025	1	07/05/18 13:09	07/05/18 17:14	75-34-3	
1,1-Dichloroethene	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	75-35-4	
1,2,4-Trichlorobenzene	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	120-82-1	
1,2,4-Trimethylbenzene	**0.0063J**	mg/kg	0.064	0.0033	1	07/05/18 13:09	07/05/18 17:14	95-63-6	
1,2-Dibromoethane (EDB)	**<0.016**	mg/kg	0.064	0.016	1	07/05/18 13:09	07/05/18 17:14	106-93-4	
1,2-Dichlorobenzene	**<0.0032**	mg/kg	0.064	0.0032	1	07/05/18 13:09	07/05/18 17:14	95-50-1	
1,2-Dichloroethane	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	107-06-2	
1,3,5-Trimethylbenzene	**<0.0035**	mg/kg	0.064	0.0035	1	07/05/18 13:09	07/05/18 17:14	108-67-8	
1,3-Dichlorobenzene	**<0.0025**	mg/kg	0.064	0.0025	1	07/05/18 13:09	07/05/18 17:14	541-73-1	
1,4-Dichlorobenzene	**<0.0042**	mg/kg	0.064	0.0042	1	07/05/18 13:09	07/05/18 17:14	106-46-7	
2-Butanone (MEK)	**<0.052**	mg/kg	0.32	0.052	1	07/05/18 13:09	07/05/18 17:14	78-93-3	
2-Hexanone	**<0.011**	mg/kg	0.32	0.011	1	07/05/18 13:09	07/05/18 17:14	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.016**	mg/kg	0.32	0.016	1	07/05/18 13:09	07/05/18 17:14	108-10-1	
Acetone	**<0.12**	mg/kg	3.2	0.12	1	07/05/18 13:09	07/05/18 17:14	67-64-1	
Benzene	**<0.0041**	mg/kg	0.026	0.0041	1	07/05/18 13:09	07/05/18 17:14	71-43-2	
Bromodichloromethane	**<0.0071**	mg/kg	0.064	0.0071	1	07/05/18 13:09	07/05/18 17:14	75-27-4	
Bromoform	**<0.013**	mg/kg	0.64	0.013	1	07/05/18 13:09	07/05/18 17:14	75-25-2	
Bromomethane	**<0.012**	mg/kg	0.64	0.012	1	07/05/18 13:09	07/05/18 17:14	74-83-9	
Carbon tetrachloride	**0.073**	mg/kg	0.064	0.0064	1	07/05/18 13:09	07/05/18 17:14	56-23-5	
Chlorobenzene	**<0.0039**	mg/kg	0.064	0.0039	1	07/05/18 13:09	07/05/18 17:14	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.64	0.031	1	07/05/18 13:09	07/05/18 17:14	75-00-3	
Chloroform	**<0.026**	mg/kg	0.064	0.026	1	07/05/18 13:09	07/05/18 17:14	67-66-3	
Chloromethane	**<0.024**	mg/kg	0.26	0.024	1	07/05/18 13:09	07/05/18 17:14	74-87-3	
Dibromochloromethane	**<0.0056**	mg/kg	0.26	0.0056	1	07/05/18 13:09	07/05/18 17:14	124-48-1	
Dichlorodifluoromethane	**<0.024**	mg/kg	0.26	0.024	1	07/05/18 13:09	07/05/18 17:14	75-71-8	
Ethylbenzene	**<0.0035**	mg/kg	0.064	0.0035	1	07/05/18 13:09	07/05/18 17:14	100-41-4	
Hexachloro-1,3-butadiene	**<0.018**	mg/kg	0.32	0.018	1	07/05/18 13:09	07/05/18 17:14	87-68-3	
Methyl-tert-butyl ether	**<0.0034**	mg/kg	0.064	0.0034	1	07/05/18 13:09	07/05/18 17:14	1634-04-4	
Methylene Chloride	**<0.029**	mg/kg	0.26	0.029	1	07/05/18 13:09	07/05/18 17:14	75-09-2	
Naphthalene	**0.0076J**	mg/kg	0.26	0.0067	1	07/05/18 13:09	07/05/18 17:14	91-20-3	
Styrene	**<0.0039**	mg/kg	0.064	0.0039	1	07/05/18 13:09	07/05/18 17:14	100-42-5	
Tetrachloroethene	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	127-18-4	
Tetrahydrofuran	**<0.088**	mg/kg	2.6	0.088	1	07/05/18 13:09	07/05/18 17:14	109-99-9	
Toluene	**0.24**	mg/kg	0.064	0.0052	1	07/05/18 13:09	07/05/18 17:14	108-88-3	
Trichloroethene	**<0.0074**	mg/kg	0.064	0.0074	1	07/05/18 13:09	07/05/18 17:14	79-01-6	
Trichlorofluoromethane	**<0.022**	mg/kg	0.26	0.022	1	07/05/18 13:09	07/05/18 17:14	75-69-4	
Vinyl acetate	**<0.0078**	mg/kg	0.64	0.0078	1	07/05/18 13:09	07/05/18 17:14	108-05-4	
Vinyl chloride	**<0.0084**	mg/kg	0.026	0.0084	1	07/05/18 13:09	07/05/18 17:14	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-03 **Lab ID: 10437471003** Collected: 06/27/18 13:40 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.011**	mg/kg	0.064	0.011	1	07/05/18 13:09	07/05/18 17:14	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	10061-01-5	
m&p-Xylene	**<0.0088**	mg/kg	0.13	0.0088	1	07/05/18 13:09	07/05/18 17:14	179601-23-1	
o-Xylene	**<0.0045**	mg/kg	0.064	0.0045	1	07/05/18 13:09	07/05/18 17:14	95-47-6	
trans-1,2-Dichloroethene	**<0.012**	mg/kg	0.064	0.012	1	07/05/18 13:09	07/05/18 17:14	156-60-5	
trans-1,3-Dichloropropene	**<0.0064**	mg/kg	0.064	0.0064	1	07/05/18 13:09	07/05/18 17:14	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 17:14	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	07/05/18 13:09	07/05/18 17:14	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 17:14	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-04 **Lab ID: 10437471004** Collected: 06/27/18 13:50 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**6.4**	%	0.10	0.10	1		06/29/18 12:17		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0054**	mg/kg	0.20	0.0054	1	07/05/18 13:09	07/05/18 17:31	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0054**	mg/kg	0.051	0.0054	1	07/05/18 13:09	07/05/18 17:31	79-34-5	
1,1,2-Trichloroethane	**<0.0085**	mg/kg	0.051	0.0085	1	07/05/18 13:09	07/05/18 17:31	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0055**	mg/kg	0.20	0.0055	1	07/05/18 13:09	07/05/18 17:31	76-13-1	
1,1-Dichloroethane	**<0.020**	mg/kg	0.051	0.020	1	07/05/18 13:09	07/05/18 17:31	75-34-3	
1,1-Dichloroethene	**<0.0094**	mg/kg	0.051	0.0094	1	07/05/18 13:09	07/05/18 17:31	75-35-4	
1,2,4-Trichlorobenzene	**<0.0099**	mg/kg	0.051	0.0099	1	07/05/18 13:09	07/05/18 17:31	120-82-1	
1,2,4-Trimethylbenzene	**0.028J**	mg/kg	0.051	0.0026	1	07/05/18 13:09	07/05/18 17:31	95-63-6	
1,2-Dibromoethane (EDB)	**<0.012**	mg/kg	0.051	0.012	1	07/05/18 13:09	07/05/18 17:31	106-93-4	
1,2-Dichlorobenzene	**<0.0026**	mg/kg	0.051	0.0026	1	07/05/18 13:09	07/05/18 17:31	95-50-1	
1,2-Dichloroethane	**<0.0095**	mg/kg	0.051	0.0095	1	07/05/18 13:09	07/05/18 17:31	107-06-2	
1,3,5-Trimethylbenzene	**0.0066J**	mg/kg	0.051	0.0028	1	07/05/18 13:09	07/05/18 17:31	108-67-8	
1,3-Dichlorobenzene	**<0.0020**	mg/kg	0.051	0.0020	1	07/05/18 13:09	07/05/18 17:31	541-73-1	
1,4-Dichlorobenzene	**<0.0034**	mg/kg	0.051	0.0034	1	07/05/18 13:09	07/05/18 17:31	106-46-7	
2-Butanone (MEK)	**<0.041**	mg/kg	0.26	0.041	1	07/05/18 13:09	07/05/18 17:31	78-93-3	
2-Hexanone	**<0.0086**	mg/kg	0.26	0.0086	1	07/05/18 13:09	07/05/18 17:31	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.26	0.013	1	07/05/18 13:09	07/05/18 17:31	108-10-1	
Acetone	**<0.095**	mg/kg	2.6	0.095	1	07/05/18 13:09	07/05/18 17:31	67-64-1	
Benzene	**0.020J**	mg/kg	0.020	0.0033	1	07/05/18 13:09	07/05/18 17:31	71-43-2	
Bromodichloromethane	**<0.0057**	mg/kg	0.051	0.0057	1	07/05/18 13:09	07/05/18 17:31	75-27-4	
Bromoform	**<0.011**	mg/kg	0.51	0.011	1	07/05/18 13:09	07/05/18 17:31	75-25-2	
Bromomethane	**<0.0098**	mg/kg	0.51	0.0098	1	07/05/18 13:09	07/05/18 17:31	74-83-9	
Carbon tetrachloride	**<0.0051**	mg/kg	0.051	0.0051	1	07/05/18 13:09	07/05/18 17:31	56-23-5	
Chlorobenzene	**<0.0031**	mg/kg	0.051	0.0031	1	07/05/18 13:09	07/05/18 17:31	108-90-7	
Chloroethane	**<0.024**	mg/kg	0.51	0.024	1	07/05/18 13:09	07/05/18 17:31	75-00-3	
Chloroform	**<0.021**	mg/kg	0.051	0.021	1	07/05/18 13:09	07/05/18 17:31	67-66-3	
Chloromethane	**<0.019**	mg/kg	0.20	0.019	1	07/05/18 13:09	07/05/18 17:31	74-87-3	
Dibromochloromethane	**<0.0044**	mg/kg	0.20	0.0044	1	07/05/18 13:09	07/05/18 17:31	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.20	0.019	1	07/05/18 13:09	07/05/18 17:31	75-71-8	
Ethylbenzene	**0.0099J**	mg/kg	0.051	0.0028	1	07/05/18 13:09	07/05/18 17:31	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.26	0.014	1	07/05/18 13:09	07/05/18 17:31	87-68-3	
Methyl-tert-butyl ether	**<0.0027**	mg/kg	0.051	0.0027	1	07/05/18 13:09	07/05/18 17:31	1634-04-4	
Methylene Chloride	**<0.023**	mg/kg	0.20	0.023	1	07/05/18 13:09	07/05/18 17:31	75-09-2	
Naphthalene	**0.028J**	mg/kg	0.20	0.0053	1	07/05/18 13:09	07/05/18 17:31	91-20-3	
Styrene	**<0.0031**	mg/kg	0.051	0.0031	1	07/05/18 13:09	07/05/18 17:31	100-42-5	
Tetrachloroethene	**<0.0097**	mg/kg	0.051	0.0097	1	07/05/18 13:09	07/05/18 17:31	127-18-4	
Tetrahydrofuran	**<0.070**	mg/kg	2.0	0.070	1	07/05/18 13:09	07/05/18 17:31	109-99-9	
Toluene	**0.065**	mg/kg	0.051	0.0041	1	07/05/18 13:09	07/05/18 17:31	108-88-3	
Trichloroethene	**<0.0059**	mg/kg	0.051	0.0059	1	07/05/18 13:09	07/05/18 17:31	79-01-6	
Trichlorofluoromethane	**<0.018**	mg/kg	0.20	0.018	1	07/05/18 13:09	07/05/18 17:31	75-69-4	
Vinyl acetate	**<0.0062**	mg/kg	0.51	0.0062	1	07/05/18 13:09	07/05/18 17:31	108-05-4	
Vinyl chloride	**<0.0067**	mg/kg	0.020	0.0067	1	07/05/18 13:09	07/05/18 17:31	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-04 **Lab ID: 10437471004** Collected: 06/27/18 13:50 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0084**	mg/kg	0.051	0.0084	1	07/05/18 13:09	07/05/18 17:31	156-59-2	
cis-1,3-Dichloropropene	**<0.0097**	mg/kg	0.051	0.0097	1	07/05/18 13:09	07/05/18 17:31	10061-01-5	
m&p-Xylene	**0.059J**	mg/kg	0.10	0.0070	1	07/05/18 13:09	07/05/18 17:31	179601-23-1	
o-Xylene	**0.030J**	mg/kg	0.051	0.0036	1	07/05/18 13:09	07/05/18 17:31	95-47-6	
trans-1,2-Dichloroethene	**<0.0097**	mg/kg	0.051	0.0097	1	07/05/18 13:09	07/05/18 17:31	156-60-5	
trans-1,3-Dichloropropene	**<0.0051**	mg/kg	0.051	0.0051	1	07/05/18 13:09	07/05/18 17:31	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%.	75-125		1	07/05/18 13:09	07/05/18 17:31	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 17:31	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1	07/05/18 13:09	07/05/18 17:31	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-05 **Lab ID: 10437471005** Collected: 06/27/18 14:05 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**8.1**	%	0.10	0.10	1		06/29/18 12:17		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0056**	mg/kg	0.21	0.0056	1	07/05/18 13:09	07/05/18 17:48	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0056**	mg/kg	0.054	0.0056	1	07/05/18 13:09	07/05/18 17:48	79-34-5	
1,1,2-Trichloroethane	**<0.0089**	mg/kg	0.054	0.0089	1	07/05/18 13:09	07/05/18 17:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0057**	mg/kg	0.21	0.0057	1	07/05/18 13:09	07/05/18 17:48	76-13-1	
1,1-Dichloroethane	**<0.021**	mg/kg	0.054	0.021	1	07/05/18 13:09	07/05/18 17:48	75-34-3	
1,1-Dichloroethene	**<0.0098**	mg/kg	0.054	0.0098	1	07/05/18 13:09	07/05/18 17:48	75-35-4	
1,2,4-Trichlorobenzene	**<0.010**	mg/kg	0.054	0.010	1	07/05/18 13:09	07/05/18 17:48	120-82-1	
1,2,4-Trimethylbenzene	**<0.0028**	mg/kg	0.054	0.0028	1	07/05/18 13:09	07/05/18 17:48	95-63-6	
1,2-Dibromoethane (EDB)	**<0.013**	mg/kg	0.054	0.013	1	07/05/18 13:09	07/05/18 17:48	106-93-4	
1,2-Dichlorobenzene	**<0.0027**	mg/kg	0.054	0.0027	1	07/05/18 13:09	07/05/18 17:48	95-50-1	
1,2-Dichloroethane	**<0.010**	mg/kg	0.054	0.010	1	07/05/18 13:09	07/05/18 17:48	107-06-2	
1,3,5-Trimethylbenzene	**<0.0029**	mg/kg	0.054	0.0029	1	07/05/18 13:09	07/05/18 17:48	108-67-8	
1,3-Dichlorobenzene	**<0.0021**	mg/kg	0.054	0.0021	1	07/05/18 13:09	07/05/18 17:48	541-73-1	
1,4-Dichlorobenzene	**<0.0035**	mg/kg	0.054	0.0035	1	07/05/18 13:09	07/05/18 17:48	106-46-7	
2-Butanone (MEK)	**<0.043**	mg/kg	0.27	0.043	1	07/05/18 13:09	07/05/18 17:48	78-93-3	
2-Hexanone	**<0.0090**	mg/kg	0.27	0.0090	1	07/05/18 13:09	07/05/18 17:48	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.014**	mg/kg	0.27	0.014	1	07/05/18 13:09	07/05/18 17:48	108-10-1	
Acetone	**<0.099**	mg/kg	2.7	0.099	1	07/05/18 13:09	07/05/18 17:48	67-64-1	
Benzene	**<0.0035**	mg/kg	0.021	0.0035	1	07/05/18 13:09	07/05/18 17:48	71-43-2	
Bromodichloromethane	**<0.0059**	mg/kg	0.054	0.0059	1	07/05/18 13:09	07/05/18 17:48	75-27-4	
Bromoform	**<0.011**	mg/kg	0.54	0.011	1	07/05/18 13:09	07/05/18 17:48	75-25-2	
Bromomethane	**<0.010**	mg/kg	0.54	0.010	1	07/05/18 13:09	07/05/18 17:48	74-83-9	
Carbon tetrachloride	**<0.0054**	mg/kg	0.054	0.0054	1	07/05/18 13:09	07/05/18 17:48	56-23-5	
Chlorobenzene	**<0.0033**	mg/kg	0.054	0.0033	1	07/05/18 13:09	07/05/18 17:48	108-90-7	
Chloroethane	**<0.026**	mg/kg	0.54	0.026	1	07/05/18 13:09	07/05/18 17:48	75-00-3	
Chloroform	**<0.022**	mg/kg	0.054	0.022	1	07/05/18 13:09	07/05/18 17:48	67-66-3	
Chloromethane	**<0.020**	mg/kg	0.21	0.020	1	07/05/18 13:09	07/05/18 17:48	74-87-3	
Dibromochloromethane	**<0.0047**	mg/kg	0.21	0.0047	1	07/05/18 13:09	07/05/18 17:48	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.21	0.020	1	07/05/18 13:09	07/05/18 17:48	75-71-8	
Ethylbenzene	**<0.0029**	mg/kg	0.054	0.0029	1	07/05/18 13:09	07/05/18 17:48	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.27	0.015	1	07/05/18 13:09	07/05/18 17:48	87-68-3	
Methyl-tert-butyl ether	**<0.0028**	mg/kg	0.054	0.0028	1	07/05/18 13:09	07/05/18 17:48	1634-04-4	
Methylene Chloride	**<0.024**	mg/kg	0.21	0.024	1	07/05/18 13:09	07/05/18 17:48	75-09-2	
Naphthalene	**<0.0056**	mg/kg	0.21	0.0056	1	07/05/18 13:09	07/05/18 17:48	91-20-3	
Styrene	**<0.0032**	mg/kg	0.054	0.0032	1	07/05/18 13:09	07/05/18 17:48	100-42-5	
Tetrachloroethene	**<0.010**	mg/kg	0.054	0.010	1	07/05/18 13:09	07/05/18 17:48	127-18-4	
Tetrahydrofuran	**<0.074**	mg/kg	2.1	0.074	1	07/05/18 13:09	07/05/18 17:48	109-99-9	
Toluene	**0.088**	mg/kg	0.054	0.0043	1	07/05/18 13:09	07/05/18 17:48	108-88-3	
Trichloroethene	**<0.0062**	mg/kg	0.054	0.0062	1	07/05/18 13:09	07/05/18 17:48	79-01-6	
Trichlorofluoromethane	**<0.018**	mg/kg	0.21	0.018	1	07/05/18 13:09	07/05/18 17:48	75-69-4	
Vinyl acetate	**<0.0065**	mg/kg	0.54	0.0065	1	07/05/18 13:09	07/05/18 17:48	108-05-4	
Vinyl chloride	**<0.0070**	mg/kg	0.021	0.0070	1	07/05/18 13:09	07/05/18 17:48	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-05 **Lab ID: 10437471005** Collected: 06/27/18 14:05 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0088**	mg/kg	0.054	0.0088	1	07/05/18 13:09	07/05/18 17:48	156-59-2	
cis-1,3-Dichloropropene	**<0.010**	mg/kg	0.054	0.010	1	07/05/18 13:09	07/05/18 17:48	10061-01-5	
m&p-Xylene	**0.022J**	mg/kg	0.11	0.0074	1	07/05/18 13:09	07/05/18 17:48	179601-23-1	
o-Xylene	**<0.0038**	mg/kg	0.054	0.0038	1	07/05/18 13:09	07/05/18 17:48	95-47-6	
trans-1,2-Dichloroethene	**<0.010**	mg/kg	0.054	0.010	1	07/05/18 13:09	07/05/18 17:48	156-60-5	
trans-1,3-Dichloropropene	**<0.0053**	mg/kg	0.054	0.0053	1	07/05/18 13:09	07/05/18 17:48	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1	07/05/18 13:09	07/05/18 17:48	17060-07-0	1M
Toluene-d8 (S)	99	%.	75-125		1	07/05/18 13:09	07/05/18 17:48	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	07/05/18 13:09	07/05/18 17:48	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-06 **Lab ID: 10437471006** Collected: 06/27/18 14:10 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.3**	%	0.10	0.10	1		06/29/18 12:17		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0060**	mg/kg	0.23	0.0060	1	07/05/18 13:09	07/05/18 18:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0060**	mg/kg	0.057	0.0060	1	07/05/18 13:09	07/05/18 18:05	79-34-5	
1,1,2-Trichloroethane	**<0.0096**	mg/kg	0.057	0.0096	1	07/05/18 13:09	07/05/18 18:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0061**	mg/kg	0.23	0.0061	1	07/05/18 13:09	07/05/18 18:05	76-13-1	
1,1-Dichloroethane	**<0.022**	mg/kg	0.057	0.022	1	07/05/18 13:09	07/05/18 18:05	75-34-3	
1,1-Dichloroethene	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	75-35-4	
1,2,4-Trichlorobenzene	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	120-82-1	
1,2,4-Trimethylbenzene	**0.014J**	mg/kg	0.057	0.0030	1	07/05/18 13:09	07/05/18 18:05	95-63-6	
1,2-Dibromoethane (EDB)	**<0.014**	mg/kg	0.057	0.014	1	07/05/18 13:09	07/05/18 18:05	106-93-4	
1,2-Dichlorobenzene	**<0.0029**	mg/kg	0.057	0.0029	1	07/05/18 13:09	07/05/18 18:05	95-50-1	
1,2-Dichloroethane	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	107-06-2	
1,3,5-Trimethylbenzene	**0.0057J**	mg/kg	0.057	0.0031	1	07/05/18 13:09	07/05/18 18:05	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.057	0.0022	1	07/05/18 13:09	07/05/18 18:05	541-73-1	
1,4-Dichlorobenzene	**<0.0038**	mg/kg	0.057	0.0038	1	07/05/18 13:09	07/05/18 18:05	106-46-7	
2-Butanone (MEK)	**<0.047**	mg/kg	0.29	0.047	1	07/05/18 13:09	07/05/18 18:05	78-93-3	
2-Hexanone	**<0.0097**	mg/kg	0.29	0.0097	1	07/05/18 13:09	07/05/18 18:05	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.014**	mg/kg	0.29	0.014	1	07/05/18 13:09	07/05/18 18:05	108-10-1	
Acetone	**<0.11**	mg/kg	2.9	0.11	1	07/05/18 13:09	07/05/18 18:05	67-64-1	
Benzene	**<0.0037**	mg/kg	0.023	0.0037	1	07/05/18 13:09	07/05/18 18:05	71-43-2	
Bromodichloromethane	**<0.0064**	mg/kg	0.057	0.0064	1	07/05/18 13:09	07/05/18 18:05	75-27-4	
Bromoform	**<0.012**	mg/kg	0.57	0.012	1	07/05/18 13:09	07/05/18 18:05	75-25-2	
Bromomethane	**<0.011**	mg/kg	0.57	0.011	1	07/05/18 13:09	07/05/18 18:05	74-83-9	
Carbon tetrachloride	**<0.0058**	mg/kg	0.057	0.0058	1	07/05/18 13:09	07/05/18 18:05	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.057	0.0035	1	07/05/18 13:09	07/05/18 18:05	108-90-7	
Chloroethane	**<0.027**	mg/kg	0.57	0.027	1	07/05/18 13:09	07/05/18 18:05	75-00-3	
Chloroform	**<0.024**	mg/kg	0.057	0.024	1	07/05/18 13:09	07/05/18 18:05	67-66-3	
Chloromethane	**<0.022**	mg/kg	0.23	0.022	1	07/05/18 13:09	07/05/18 18:05	74-87-3	
Dibromochloromethane	**<0.0050**	mg/kg	0.23	0.0050	1	07/05/18 13:09	07/05/18 18:05	124-48-1	
Dichlorodifluoromethane	**<0.021**	mg/kg	0.23	0.021	1	07/05/18 13:09	07/05/18 18:05	75-71-8	
Ethylbenzene	**<0.0031**	mg/kg	0.057	0.0031	1	07/05/18 13:09	07/05/18 18:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.016**	mg/kg	0.29	0.016	1	07/05/18 13:09	07/05/18 18:05	87-68-3	
Methyl-tert-butyl ether	**<0.0030**	mg/kg	0.057	0.0030	1	07/05/18 13:09	07/05/18 18:05	1634-04-4	
Methylene Chloride	**<0.026**	mg/kg	0.23	0.026	1	07/05/18 13:09	07/05/18 18:05	75-09-2	
Naphthalene	**<0.0060**	mg/kg	0.23	0.0060	1	07/05/18 13:09	07/05/18 18:05	91-20-3	
Styrene	**<0.0035**	mg/kg	0.057	0.0035	1	07/05/18 13:09	07/05/18 18:05	100-42-5	
Tetrachloroethene	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	127-18-4	
Tetrahydrofuran	**<0.079**	mg/kg	2.3	0.079	1	07/05/18 13:09	07/05/18 18:05	109-99-9	
Toluene	**0.0050J**	mg/kg	0.057	0.0046	1	07/05/18 13:09	07/05/18 18:05	108-88-3	
Trichloroethene	**<0.0066**	mg/kg	0.057	0.0066	1	07/05/18 13:09	07/05/18 18:05	79-01-6	
Trichlorofluoromethane	**<0.020**	mg/kg	0.23	0.020	1	07/05/18 13:09	07/05/18 18:05	75-69-4	
Vinyl acetate	**<0.0070**	mg/kg	0.57	0.0070	1	07/05/18 13:09	07/05/18 18:05	108-05-4	
Vinyl chloride	**<0.0075**	mg/kg	0.023	0.0075	1	07/05/18 13:09	07/05/18 18:05	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-06 **Lab ID: 10437471006** Collected: 06/27/18 14:10 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0095**	mg/kg	0.057	0.0095	1	07/05/18 13:09	07/05/18 18:05	156-59-2	
cis-1,3-Dichloropropene	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	10061-01-5	
m&p-Xylene	**0.010J**	mg/kg	0.11	0.0079	1	07/05/18 13:09	07/05/18 18:05	179601-23-1	
o-Xylene	**<0.0040**	mg/kg	0.057	0.0040	1	07/05/18 13:09	07/05/18 18:05	95-47-6	
trans-1,2-Dichloroethene	**<0.011**	mg/kg	0.057	0.011	1	07/05/18 13:09	07/05/18 18:05	156-60-5	
trans-1,3-Dichloropropene	**<0.0057**	mg/kg	0.057	0.0057	1	07/05/18 13:09	07/05/18 18:05	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1	07/05/18 13:09	07/05/18 18:05	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	07/05/18 13:09	07/05/18 18:05	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1	07/05/18 13:09	07/05/18 18:05	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-07 **Lab ID: 10437471007** Collected: 06/27/18 14:25 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.7**	%	0.10	0.10	1		06/29/18 12:17		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0061**	mg/kg	0.23	0.0061	1	07/05/18 13:09	07/05/18 18:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0061**	mg/kg	0.058	0.0061	1	07/05/18 13:09	07/05/18 18:22	79-34-5	
1,1,2-Trichloroethane	**<0.0096**	mg/kg	0.058	0.0096	1	07/05/18 13:09	07/05/18 18:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0062**	mg/kg	0.23	0.0062	1	07/05/18 13:09	07/05/18 18:22	76-13-1	
1,1-Dichloroethane	**<0.022**	mg/kg	0.058	0.022	1	07/05/18 13:09	07/05/18 18:22	75-34-3	
1,1-Dichloroethene	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	75-35-4	
1,2,4-Trichlorobenzene	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.0030**	mg/kg	0.058	0.0030	1	07/05/18 13:09	07/05/18 18:22	95-63-6	
1,2-Dibromoethane (EDB)	**<0.014**	mg/kg	0.058	0.014	1	07/05/18 13:09	07/05/18 18:22	106-93-4	
1,2-Dichlorobenzene	**<0.0029**	mg/kg	0.058	0.0029	1	07/05/18 13:09	07/05/18 18:22	95-50-1	
1,2-Dichloroethane	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	107-06-2	
1,3,5-Trimethylbenzene	**<0.0032**	mg/kg	0.058	0.0032	1	07/05/18 13:09	07/05/18 18:22	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.058	0.0022	1	07/05/18 13:09	07/05/18 18:22	541-73-1	
1,4-Dichlorobenzene	**<0.0038**	mg/kg	0.058	0.0038	1	07/05/18 13:09	07/05/18 18:22	106-46-7	
2-Butanone (MEK)	**<0.047**	mg/kg	0.29	0.047	1	07/05/18 13:09	07/05/18 18:22	78-93-3	
2-Hexanone	**<0.0098**	mg/kg	0.29	0.0098	1	07/05/18 13:09	07/05/18 18:22	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.015**	mg/kg	0.29	0.015	1	07/05/18 13:09	07/05/18 18:22	108-10-1	
Acetone	**<0.11**	mg/kg	2.9	0.11	1	07/05/18 13:09	07/05/18 18:22	67-64-1	
Benzene	**<0.0037**	mg/kg	0.023	0.0037	1	07/05/18 13:09	07/05/18 18:22	71-43-2	
Bromodichloromethane	**<0.0064**	mg/kg	0.058	0.0064	1	07/05/18 13:09	07/05/18 18:22	75-27-4	
Bromoform	**<0.012**	mg/kg	0.58	0.012	1	07/05/18 13:09	07/05/18 18:22	75-25-2	
Bromomethane	**<0.011**	mg/kg	0.58	0.011	1	07/05/18 13:09	07/05/18 18:22	74-83-9	
Carbon tetrachloride	**<0.0058**	mg/kg	0.058	0.0058	1	07/05/18 13:09	07/05/18 18:22	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.058	0.0035	1	07/05/18 13:09	07/05/18 18:22	108-90-7	
Chloroethane	**<0.028**	mg/kg	0.58	0.028	1	07/05/18 13:09	07/05/18 18:22	75-00-3	
Chloroform	**<0.024**	mg/kg	0.058	0.024	1	07/05/18 13:09	07/05/18 18:22	67-66-3	
Chloromethane	**<0.022**	mg/kg	0.23	0.022	1	07/05/18 13:09	07/05/18 18:22	74-87-3	
Dibromochloromethane	**<0.0050**	mg/kg	0.23	0.0050	1	07/05/18 13:09	07/05/18 18:22	124-48-1	
Dichlorodifluoromethane	**<0.021**	mg/kg	0.23	0.021	1	07/05/18 13:09	07/05/18 18:22	75-71-8	
Ethylbenzene	**<0.0031**	mg/kg	0.058	0.0031	1	07/05/18 13:09	07/05/18 18:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.016**	mg/kg	0.29	0.016	1	07/05/18 13:09	07/05/18 18:22	87-68-3	
Methyl-tert-butyl ether	**<0.0031**	mg/kg	0.058	0.0031	1	07/05/18 13:09	07/05/18 18:22	1634-04-4	
Methylene Chloride	**<0.026**	mg/kg	0.23	0.026	1	07/05/18 13:09	07/05/18 18:22	75-09-2	
Naphthalene	**<0.0060**	mg/kg	0.23	0.0060	1	07/05/18 13:09	07/05/18 18:22	91-20-3	
Styrene	**<0.0035**	mg/kg	0.058	0.0035	1	07/05/18 13:09	07/05/18 18:22	100-42-5	
Tetrachloroethene	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	127-18-4	
Tetrahydrofuran	**<0.080**	mg/kg	2.3	0.080	1	07/05/18 13:09	07/05/18 18:22	109-99-9	
Toluene	**<0.0047**	mg/kg	0.058	0.0047	1	07/05/18 13:09	07/05/18 18:22	108-88-3	
Trichloroethene	**<0.0067**	mg/kg	0.058	0.0067	1	07/05/18 13:09	07/05/18 18:22	79-01-6	
Trichlorofluoromethane	**<0.020**	mg/kg	0.23	0.020	1	07/05/18 13:09	07/05/18 18:22	75-69-4	
Vinyl acetate	**<0.0071**	mg/kg	0.58	0.0071	1	07/05/18 13:09	07/05/18 18:22	108-05-4	
Vinyl chloride	**<0.0076**	mg/kg	0.023	0.0076	1	07/05/18 13:09	07/05/18 18:22	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-07 **Lab ID: 10437471007** Collected: 06/27/18 14:25 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0096**	mg/kg	0.058	0.0096	1	07/05/18 13:09	07/05/18 18:22	156-59-2	
cis-1,3-Dichloropropene	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	10061-01-5	
m&p-Xylene	**<0.0080**	mg/kg	0.12	0.0080	1	07/05/18 13:09	07/05/18 18:22	179601-23-1	
o-Xylene	**<0.0041**	mg/kg	0.058	0.0041	1	07/05/18 13:09	07/05/18 18:22	95-47-6	
trans-1,2-Dichloroethene	**<0.011**	mg/kg	0.058	0.011	1	07/05/18 13:09	07/05/18 18:22	156-60-5	
trans-1,3-Dichloropropene	**<0.0058**	mg/kg	0.058	0.0058	1	07/05/18 13:09	07/05/18 18:22	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 18:22	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 18:22	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 18:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: Trip Blank **Lab ID: 10437471008** Collected: 06/27/18 00:00 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0053**	mg/kg	0.20	0.0053	1	07/05/18 13:09	07/05/18 16:23	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0052**	mg/kg	0.050	0.0052	1	07/05/18 13:09	07/05/18 16:23	79-34-5	
1,1,2-Trichloroethane	**<0.0083**	mg/kg	0.050	0.0083	1	07/05/18 13:09	07/05/18 16:23	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0053**	mg/kg	0.20	0.0053	1	07/05/18 13:09	07/05/18 16:23	76-13-1	
1,1-Dichloroethane	**<0.019**	mg/kg	0.050	0.019	1	07/05/18 13:09	07/05/18 16:23	75-34-3	
1,1-Dichloroethene	**<0.0092**	mg/kg	0.050	0.0092	1	07/05/18 13:09	07/05/18 16:23	75-35-4	
1,2,4-Trichlorobenzene	**<0.0097**	mg/kg	0.050	0.0097	1	07/05/18 13:09	07/05/18 16:23	120-82-1	
1,2,4-Trimethylbenzene	**<0.0026**	mg/kg	0.050	0.0026	1	07/05/18 13:09	07/05/18 16:23	95-63-6	
1,2-Dibromoethane (EDB)	**<0.012**	mg/kg	0.050	0.012	1	07/05/18 13:09	07/05/18 16:23	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.050	0.0025	1	07/05/18 13:09	07/05/18 16:23	95-50-1	
1,2-Dichloroethane	**<0.0093**	mg/kg	0.050	0.0093	1	07/05/18 13:09	07/05/18 16:23	107-06-2	
1,3,5-Trimethylbenzene	**<0.0027**	mg/kg	0.050	0.0027	1	07/05/18 13:09	07/05/18 16:23	108-67-8	
1,3-Dichlorobenzene	**<0.0019**	mg/kg	0.050	0.0019	1	07/05/18 13:09	07/05/18 16:23	541-73-1	
1,4-Dichlorobenzene	**<0.0033**	mg/kg	0.050	0.0033	1	07/05/18 13:09	07/05/18 16:23	106-46-7	
2-Butanone (MEK)	**<0.040**	mg/kg	0.25	0.040	1	07/05/18 13:09	07/05/18 16:23	78-93-3	
2-Hexanone	**<0.0084**	mg/kg	0.25	0.0084	1	07/05/18 13:09	07/05/18 16:23	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.25	0.013	1	07/05/18 13:09	07/05/18 16:23	108-10-1	
Acetone	**<0.092**	mg/kg	2.5	0.092	1	07/05/18 13:09	07/05/18 16:23	67-64-1	
Benzene	**<0.0032**	mg/kg	0.020	0.0032	1	07/05/18 13:09	07/05/18 16:23	71-43-2	
Bromodichloromethane	**<0.0055**	mg/kg	0.050	0.0055	1	07/05/18 13:09	07/05/18 16:23	75-27-4	
Bromoform	**<0.010**	mg/kg	0.50	0.010	1	07/05/18 13:09	07/05/18 16:23	75-25-2	
Bromomethane	**<0.0096**	mg/kg	0.50	0.0096	1	07/05/18 13:09	07/05/18 16:23	74-83-9	
Carbon tetrachloride	**<0.0050**	mg/kg	0.050	0.0050	1	07/05/18 13:09	07/05/18 16:23	56-23-5	
Chlorobenzene	**<0.0030**	mg/kg	0.050	0.0030	1	07/05/18 13:09	07/05/18 16:23	108-90-7	
Chloroethane	**<0.024**	mg/kg	0.50	0.024	1	07/05/18 13:09	07/05/18 16:23	75-00-3	
Chloroform	**<0.020**	mg/kg	0.050	0.020	1	07/05/18 13:09	07/05/18 16:23	67-66-3	
Chloromethane	**<0.019**	mg/kg	0.20	0.019	1	07/05/18 13:09	07/05/18 16:23	74-87-3	
Dibromochloromethane	**<0.0043**	mg/kg	0.20	0.0043	1	07/05/18 13:09	07/05/18 16:23	124-48-1	
Dichlorodifluoromethane	**<0.018**	mg/kg	0.20	0.018	1	07/05/18 13:09	07/05/18 16:23	75-71-8	
Ethylbenzene	**<0.0027**	mg/kg	0.050	0.0027	1	07/05/18 13:09	07/05/18 16:23	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.25	0.014	1	07/05/18 13:09	07/05/18 16:23	87-68-3	
Methyl-tert-butyl ether	**<0.0026**	mg/kg	0.050	0.0026	1	07/05/18 13:09	07/05/18 16:23	1634-04-4	
Methylene Chloride	**<0.023**	mg/kg	0.20	0.023	1	07/05/18 13:09	07/05/18 16:23	75-09-2	
Naphthalene	**<0.0052**	mg/kg	0.20	0.0052	1	07/05/18 13:09	07/05/18 16:23	91-20-3	
Styrene	**<0.0030**	mg/kg	0.050	0.0030	1	07/05/18 13:09	07/05/18 16:23	100-42-5	
Tetrachloroethene	**<0.0094**	mg/kg	0.050	0.0094	1	07/05/18 13:09	07/05/18 16:23	127-18-4	
Tetrahydrofuran	**<0.069**	mg/kg	2.0	0.069	1	07/05/18 13:09	07/05/18 16:23	109-99-9	
Toluene	**<0.0040**	mg/kg	0.050	0.0040	1	07/05/18 13:09	07/05/18 16:23	108-88-3	
Trichloroethene	**<0.0058**	mg/kg	0.050	0.0058	1	07/05/18 13:09	07/05/18 16:23	79-01-6	
Trichlorofluoromethane	**<0.017**	mg/kg	0.20	0.017	1	07/05/18 13:09	07/05/18 16:23	75-69-4	
Vinyl acetate	**<0.0061**	mg/kg	0.50	0.0061	1	07/05/18 13:09	07/05/18 16:23	108-05-4	
Vinyl chloride	**<0.0065**	mg/kg	0.020	0.0065	1	07/05/18 13:09	07/05/18 16:23	75-01-4	
cis-1,2-Dichloroethene	**<0.0082**	mg/kg	0.050	0.0082	1	07/05/18 13:09	07/05/18 16:23	156-59-2	
cis-1,3-Dichloropropene	**<0.0095**	mg/kg	0.050	0.0095	1	07/05/18 13:09	07/05/18 16:23	10061-01-5	
m&p-Xylene	**<0.0069**	mg/kg	0.10	0.0069	1	07/05/18 13:09	07/05/18 16:23	179601-23-1	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling

Pace Project No.: 10437471

Sample: Trip Blank **Lab ID: 10437471008** Collected: 06/27/18 00:00 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<0.0035**	mg/kg	0.050	0.0035	1	07/05/18 13:09	07/05/18 16:23	95-47-6	
trans-1,2-Dichloroethene	**<0.0095**	mg/kg	0.050	0.0095	1	07/05/18 13:09	07/05/18 16:23	156-60-5	
trans-1,3-Dichloropropene	**<0.0050**	mg/kg	0.050	0.0050	1	07/05/18 13:09	07/05/18 16:23	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 16:23	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 16:23	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	07/05/18 13:09	07/05/18 16:23	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-08 **Lab ID: 10437471009** Collected: 06/27/18 14:35 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.3**	%	0.10	0.10	1		06/29/18 15:27		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.0064**	mg/kg	0.24	0.0064	1	07/05/18 13:09	07/05/18 18:39	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0064**	mg/kg	0.061	0.0064	1	07/05/18 13:09	07/05/18 18:39	79-34-5	
1,1,2-Trichloroethane	**<0.010**	mg/kg	0.061	0.010	1	07/05/18 13:09	07/05/18 18:39	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.0065**	mg/kg	0.24	0.0065	1	07/05/18 13:09	07/05/18 18:39	76-13-1	
1,1-Dichloroethane	**<0.023**	mg/kg	0.061	0.023	1	07/05/18 13:09	07/05/18 18:39	75-34-3	
1,1-Dichloroethene	**<0.011**	mg/kg	0.061	0.011	1	07/05/18 13:09	07/05/18 18:39	75-35-4	
1,2,4-Trichlorobenzene	**<0.012**	mg/kg	0.061	0.012	1	07/05/18 13:09	07/05/18 18:39	120-82-1	
1,2,4-Trimethylbenzene	**<0.0031**	mg/kg	0.061	0.0031	1	07/05/18 13:09	07/05/18 18:39	95-63-6	
1,2-Dibromoethane (EDB)	**<0.015**	mg/kg	0.061	0.015	1	07/05/18 13:09	07/05/18 18:39	106-93-4	
1,2-Dichlorobenzene	**<0.0031**	mg/kg	0.061	0.0031	1	07/05/18 13:09	07/05/18 18:39	95-50-1	
1,2-Dichloroethane	**<0.011**	mg/kg	0.061	0.011	1	07/05/18 13:09	07/05/18 18:39	107-06-2	
1,3,5-Trimethylbenzene	**<0.0033**	mg/kg	0.061	0.0033	1	07/05/18 13:09	07/05/18 18:39	108-67-8	
1,3-Dichlorobenzene	**<0.0024**	mg/kg	0.061	0.0024	1	07/05/18 13:09	07/05/18 18:39	541-73-1	
1,4-Dichlorobenzene	**<0.0040**	mg/kg	0.061	0.0040	1	07/05/18 13:09	07/05/18 18:39	106-46-7	
2-Butanone (MEK)	**<0.049**	mg/kg	0.30	0.049	1	07/05/18 13:09	07/05/18 18:39	78-93-3	
2-Hexanone	**<0.010**	mg/kg	0.30	0.010	1	07/05/18 13:09	07/05/18 18:39	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.015**	mg/kg	0.30	0.015	1	07/05/18 13:09	07/05/18 18:39	108-10-1	
Acetone	**<0.11**	mg/kg	3.0	0.11	1	07/05/18 13:09	07/05/18 18:39	67-64-1	
Benzene	**<0.0039**	mg/kg	0.024	0.0039	1	07/05/18 13:09	07/05/18 18:39	71-43-2	
Bromodichloromethane	**<0.0067**	mg/kg	0.061	0.0067	1	07/05/18 13:09	07/05/18 18:39	75-27-4	
Bromoform	**<0.013**	mg/kg	0.61	0.013	1	07/05/18 13:09	07/05/18 18:39	75-25-2	
Bromomethane	**<0.012**	mg/kg	0.61	0.012	1	07/05/18 13:09	07/05/18 18:39	74-83-9	
Carbon tetrachloride	**<0.0061**	mg/kg	0.061	0.0061	1	07/05/18 13:09	07/05/18 18:39	56-23-5	
Chlorobenzene	**<0.0037**	mg/kg	0.061	0.0037	1	07/05/18 13:09	07/05/18 18:39	108-90-7	
Chloroethane	**<0.029**	mg/kg	0.61	0.029	1	07/05/18 13:09	07/05/18 18:39	75-00-3	
Chloroform	**<0.025**	mg/kg	0.061	0.025	1	07/05/18 13:09	07/05/18 18:39	67-66-3	
Chloromethane	**<0.023**	mg/kg	0.24	0.023	1	07/05/18 13:09	07/05/18 18:39	74-87-3	
Dibromochloromethane	**<0.0053**	mg/kg	0.24	0.0053	1	07/05/18 13:09	07/05/18 18:39	124-48-1	
Dichlorodifluoromethane	**<0.023**	mg/kg	0.24	0.023	1	07/05/18 13:09	07/05/18 18:39	75-71-8	
Ethylbenzene	**<0.0033**	mg/kg	0.061	0.0033	1	07/05/18 13:09	07/05/18 18:39	100-41-4	
Hexachloro-1,3-butadiene	**<0.017**	mg/kg	0.30	0.017	1	07/05/18 13:09	07/05/18 18:39	87-68-3	
Methyl-tert-butyl ether	**<0.0032**	mg/kg	0.061	0.0032	1	07/05/18 13:09	07/05/18 18:39	1634-04-4	
Methylene Chloride	**<0.028**	mg/kg	0.24	0.028	1	07/05/18 13:09	07/05/18 18:39	75-09-2	
Naphthalene	**<0.0063**	mg/kg	0.24	0.0063	1	07/05/18 13:09	07/05/18 18:39	91-20-3	
Styrene	**<0.0037**	mg/kg	0.061	0.0037	1	07/05/18 13:09	07/05/18 18:39	100-42-5	
Tetrachloroethene	**<0.011**	mg/kg	0.061	0.011	1	07/05/18 13:09	07/05/18 18:39	127-18-4	
Tetrahydrofuran	**<0.084**	mg/kg	2.4	0.084	1	07/05/18 13:09	07/05/18 18:39	109-99-9	
Toluene	**<0.0049**	mg/kg	0.061	0.0049	1	07/05/18 13:09	07/05/18 18:39	108-88-3	
Trichloroethene	**<0.0070**	mg/kg	0.061	0.0070	1	07/05/18 13:09	07/05/18 18:39	79-01-6	
Trichlorofluoromethane	**<0.021**	mg/kg	0.24	0.021	1	07/05/18 13:09	07/05/18 18:39	75-69-4	
Vinyl acetate	**<0.0074**	mg/kg	0.61	0.0074	1	07/05/18 13:09	07/05/18 18:39	108-05-4	
Vinyl chloride	**<0.0079**	mg/kg	0.024	0.0079	1	07/05/18 13:09	07/05/18 18:39	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Sample: PH-08 **Lab ID: 10437471009** Collected: 06/27/18 14:35 Received: 06/28/18 11:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.061	0.010	1	07/05/18 13:09	07/05/18 18:39	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.061	0.012	1	07/05/18 13:09	07/05/18 18:39	10061-01-5	
m&p-Xylene	**<0.0084**	mg/kg	0.12	0.0084	1	07/05/18 13:09	07/05/18 18:39	179601-23-1	
o-Xylene	**<0.0043**	mg/kg	0.061	0.0043	1	07/05/18 13:09	07/05/18 18:39	95-47-6	
trans-1,2-Dichloroethene	**<0.012**	mg/kg	0.061	0.012	1	07/05/18 13:09	07/05/18 18:39	156-60-5	
trans-1,3-Dichloropropene	**<0.0061**	mg/kg	0.061	0.0061	1	07/05/18 13:09	07/05/18 18:39	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1	07/05/18 13:09	07/05/18 18:39	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	07/05/18 13:09	07/05/18 18:39	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	07/05/18 13:09	07/05/18 18:39	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Soil Sampling
Pace Project No.: 10437471

QC Batch: 547795 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10437471001, 10437471002, 10437471003, 10437471004, 10437471005, 10437471006, 10437471007

SAMPLE DUPLICATE: 2977849

Parameter	Units	10437471007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.7	17.7	0	30	

SAMPLE DUPLICATE: 2978121

Parameter	Units	10437471001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	41.9	35.9	15	30	

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QUALITY CONTROL DATA

Project: 1497 Soil Sampling
Pace Project No.: 10437471

QC Batch: 547842 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10437471009

SAMPLE DUPLICATE: 2978109

Parameter	Units	10437471009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	17.2	0	30	

SAMPLE DUPLICATE: 2978110

Parameter	Units	10437552017 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.2	16.8	3	30	

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QUALITY CONTROL DATA

Project: 1497 Soil Sampling
Pace Project No.: 10437471

QC Batch: 548703 | Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B | Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10437471001, 10437471002, 10437471003, 10437471004, 10437471005, 10437471006, 10437471007, 10437471008, 10437471009

METHOD BLANK: 2982809 Matrix: Solid
Associated Lab Samples: 10437471001, 10437471002, 10437471003, 10437471004, 10437471005, 10437471006, 10437471007, 10437471008, 10437471009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	<0.0053	0.20	0.0053	07/05/18 15:32	MN
1,1,2,2-Tetrachloroethane	mg/kg	<0.0052	0.050	0.0052	07/05/18 15:32	
1,1,2-Trichloroethane	mg/kg	<0.0083	0.050	0.0083	07/05/18 15:32	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.0053	0.20	0.0053	07/05/18 15:32	
1,1-Dichloroethane	mg/kg	<0.019	0.050	0.019	07/05/18 15:32	
1,1-Dichloroethene	mg/kg	<0.0092	0.050	0.0092	07/05/18 15:32	
1,2,4-Trichlorobenzene	mg/kg	<0.0097	0.050	0.0097	07/05/18 15:32	
1,2,4-Trimethylbenzene	mg/kg	<0.0026	0.050	0.0026	07/05/18 15:32	
1,2-Dibromoethane (EDB)	mg/kg	<0.012	0.050	0.012	07/05/18 15:32	
1,2-Dichlorobenzene	mg/kg	<0.0025	0.050	0.0025	07/05/18 15:32	
1,2-Dichloroethane	mg/kg	<0.0093	0.050	0.0093	07/05/18 15:32	
1,3,5-Trimethylbenzene	mg/kg	<0.0027	0.050	0.0027	07/05/18 15:32	
1,3-Dichlorobenzene	mg/kg	<0.0019	0.050	0.0019	07/05/18 15:32	
1,4-Dichlorobenzene	mg/kg	<0.0033	0.050	0.0033	07/05/18 15:32	
2-Butanone (MEK)	mg/kg	<0.040	0.25	0.040	07/05/18 15:32	
2-Hexanone	mg/kg	<0.0084	0.25	0.0084	07/05/18 15:32	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.013	0.25	0.013	07/05/18 15:32	
Acetone	mg/kg	<0.092	2.5	0.092	07/05/18 15:32	MN
Benzene	mg/kg	<0.0032	0.020	0.0032	07/05/18 15:32	
Bromodichloromethane	mg/kg	<0.0055	0.050	0.0055	07/05/18 15:32	
Bromoform	mg/kg	<0.010	0.50	0.010	07/05/18 15:32	MN
Bromomethane	mg/kg	0.028J	0.50	0.0096	07/05/18 15:32	
Carbon tetrachloride	mg/kg	<0.0050	0.050	0.0050	07/05/18 15:32	
Chlorobenzene	mg/kg	<0.0030	0.050	0.0030	07/05/18 15:32	
Chloroethane	mg/kg	<0.024	0.50	0.024	07/05/18 15:32	
Chloroform	mg/kg	<0.020	0.050	0.020	07/05/18 15:32	
Chloromethane	mg/kg	<0.019	0.20	0.019	07/05/18 15:32	
cis-1,2-Dichloroethene	mg/kg	<0.0082	0.050	0.0082	07/05/18 15:32	
cis-1,3-Dichloropropene	mg/kg	<0.0095	0.050	0.0095	07/05/18 15:32	
Dibromochloromethane	mg/kg	<0.0043	0.20	0.0043	07/05/18 15:32	
Dichlorodifluoromethane	mg/kg	<0.018	0.20	0.018	07/05/18 15:32	
Ethylbenzene	mg/kg	<0.0027	0.050	0.0027	07/05/18 15:32	
Hexachloro-1,3-butadiene	mg/kg	<0.014	0.25	0.014	07/05/18 15:32	
m&p-Xylene	mg/kg	<0.0069	0.10	0.0069	07/05/18 15:32	
Methyl-tert-butyl ether	mg/kg	<0.0026	0.050	0.0026	07/05/18 15:32	
Methylene Chloride	mg/kg	<0.023	0.20	0.023	07/05/18 15:32	
Naphthalene	mg/kg	<0.0052	0.20	0.0052	07/05/18 15:32	
o-Xylene	mg/kg	<0.0035	0.050	0.0035	07/05/18 15:32	
Styrene	mg/kg	<0.0030	0.050	0.0030	07/05/18 15:32	
Tetrachloroethene	mg/kg	<0.0094	0.050	0.0094	07/05/18 15:32	

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QUALITY CONTROL DATA

Project: 1497 Soil Sampling
Pace Project No.: 10437471

METHOD BLANK: 2982809 Matrix: Solid
Associated Lab Samples: 10437471001, 10437471002, 10437471003, 10437471004, 10437471005, 10437471006, 10437471007, 10437471008, 10437471009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	mg/kg	<0.069	2.0	0.069	07/05/18 15:32	
Toluene	mg/kg	<0.0040	0.050	0.0040	07/05/18 15:32	
trans-1,2-Dichloroethene	mg/kg	<0.0095	0.050	0.0095	07/05/18 15:32	
trans-1,3-Dichloropropene	mg/kg	<0.0050	0.050	0.0050	07/05/18 15:32	
Trichloroethene	mg/kg	<0.0058	0.050	0.0058	07/05/18 15:32	
Trichlorofluoromethane	mg/kg	<0.017	0.20	0.017	07/05/18 15:32	
Vinyl acetate	mg/kg	<0.0061	0.50	0.0061	07/05/18 15:32	
Vinyl chloride	mg/kg	<0.0065	0.020	0.0065	07/05/18 15:32	
1,2-Dichloroethane-d4 (S)	%.	97	75-125		07/05/18 15:32	
4-Bromofluorobenzene (S)	%.	99	75-125		07/05/18 15:32	
Toluene-d8 (S)	%.	100	75-125		07/05/18 15:32	

LABORATORY CONTROL SAMPLE & LCSD: 2982810 2982811

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	mg/kg	1	1.2	1.0	121	102	59-125	17	20	
1,1,2,2-Tetrachloroethane	mg/kg	1	1.1	0.97	112	97	58-125	14	20	
1,1,2-Trichloroethane	mg/kg	1	1.2	1.0	116	103	64-125	12	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	0.98	0.94	98	94	65-125	3	20	
1,1-Dichloroethane	mg/kg	1	1.2	0.97	116	97	63-125	18	20	
1,1-Dichloroethene	mg/kg	1	1.1	1.0	106	105	59-125	2	20	
1,2,4-Trichlorobenzene	mg/kg	1	1.2	1.0	118	103	62-125	14	20	
1,2,4-Trimethylbenzene	mg/kg	1	1.2	1.0	123	103	59-125	18	20	
1,2-Dibromoethane (EDB)	mg/kg	1	1.2	1.0	120	104	64-125	14	20	
1,2-Dichlorobenzene	mg/kg	1	1.1	0.98	115	98	63-125	16	20	
1,2-Dichloroethane	mg/kg	1	1.1	0.89	107	89	57-125	18	20	
1,3,5-Trimethylbenzene	mg/kg	1	1.2	1.0	124	103	59-125	18	20	
1,3-Dichlorobenzene	mg/kg	1	1.2	1.0	119	100	64-125	17	20	
1,4-Dichlorobenzene	mg/kg	1	1.1	0.95	114	95	63-125	18	20	
2-Butanone (MEK)	mg/kg	5	5.5	4.5	110	91	48-125	19	20	
2-Hexanone	mg/kg	5	5.8	5.2	115	105	57-134	10	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	5.7	5.3	114	106	52-135	8	20	
Acetone	mg/kg	5	5.7	4.7	114	95	65-125	19	20	
Benzene	mg/kg	1	1.1	0.91	107	91	61-125	16	20	
Bromodichloromethane	mg/kg	1	1.2	1.0	115	100	57-125	14	20	
Bromoform	mg/kg	1	0.99	0.94	99	94	57-125	6	20	
Bromomethane	mg/kg	1	0.99	1.0	99	103	60-125	4	20	
Carbon tetrachloride	mg/kg	1	1.2	1.0	117	102	58-125	13	20	
Chlorobenzene	mg/kg	1	1.2	0.98	116	98	66-125	17	20	
Chloroethane	mg/kg	1	1.1	1.1	111	106	62-125	5	20	
Chloroform	mg/kg	1	1.2	1.0	117	101	59-125	15	20	
Chloromethane	mg/kg	1	1.1	1.1	109	108	50-125	1	20	
cis-1,2-Dichloroethene	mg/kg	1	1.1	0.95	110	95	61-125	15	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Soil Sampling
Pace Project No.: 10437471

LABORATORY CONTROL SAMPLE & LCSD: 2982810 2982811

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
cis-1,3-Dichloropropene	mg/kg	1	1.2	1.0	117	101	61-125	15	20	
Dibromochloromethane	mg/kg	1	1.1	0.96	108	96	60-125	11	20	
Dichlorodifluoromethane	mg/kg	1	0.71	0.75	71	75	38-125	5	20	
Ethylbenzene	mg/kg	1	1.1	0.96	112	96	62-125	16	20	
Hexachloro-1,3-butadiene	mg/kg	1	1.1	0.97	108	97	56-125	11	20	
m&p-Xylene	mg/kg	2	2.3	2.0	116	98	61-125	16	20	
Methyl-tert-butyl ether	mg/kg	1	1.1	0.97	112	97	59-125	14	20	
Methylene Chloride	mg/kg	1	1.0	0.84	103	84	64-125	20	20	
Naphthalene	mg/kg	1	1.2	1.0	120	105	53-125	13	20	
o-Xylene	mg/kg	1	1.2	1.0	118	100	61-125	17	20	
Styrene	mg/kg	1	1.2	1.1	125	109	66-125	14	20	
Tetrachloroethene	mg/kg	1	1.2	0.98	118	98	67-125	19	20	
Tetrahydrofuran	mg/kg	10	10.7	9.6	107	96	62-125	12	20	
Toluene	mg/kg	1	1.1	0.93	106	93	61-125	13	20	
trans-1,2-Dichloroethene	mg/kg	1	1.1	0.99	114	99	64-125	14	20	
trans-1,3-Dichloropropene	mg/kg	1	1.2	1.0	120	101	56-125	17	20	
Trichloroethene	mg/kg	1	1.2	0.95	116	95	67-125	20	20	
Trichlorofluoromethane	mg/kg	1	1.1	1.0	113	100	65-125	11	20	
Vinyl acetate	mg/kg	1	0.95	0.91	95	91	52-125	4	20	
Vinyl chloride	mg/kg	1	1.2	1.1	116	110	57-125	5	20	
1,2-Dichloroethane-d4 (S)	%.				98	97	75-125			
4-Bromofluorobenzene (S)	%.				102	97	75-125			
Toluene-d8 (S)	%.				100	101	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Soil Sampling
Pace Project No.: 10437471

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548910

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M Preserved from glass jar with headspace outside of 48 hours from collection.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Soil Sampling
Pace Project No.: 10437471

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437471001	**PH-01**	ASTM D2974	547795		
10437471002	**PH-02**	ASTM D2974	547795		
10437471003	**PH-03**	ASTM D2974	547795		
10437471004	**PH-04**	ASTM D2974	547795		
10437471005	**PH-05**	ASTM D2974	547795		
10437471006	**PH-06**	ASTM D2974	547795		
10437471007	**PH-07**	ASTM D2974	547795		
10437471009	**PH-08**	ASTM D2974	547842		
10437471001	**PH-01**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471002	**PH-02**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471003	**PH-03**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471004	**PH-04**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471005	**PH-05**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471006	**PH-06**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471007	**PH-07**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471008	**Trip Blank**	EPA 5035/5030B	548703	EPA 8260B	548910
10437471009	**PH-08**	EPA 5035/5030B	548703	EPA 8260B	548910

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

WO# : 10437471

10437471

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	CH2M Hill	Report To:	Mark Ochsner, Brad Ostapkowicz	Attention:	Anne Walsh
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To:	Steve Demus, Lindsey Baumann	Company:	UPRR
		Copy To:	David Hodson, UPRR-Sysdat@ghd.com	Address:	1400 W. 52nd Ave, Denver, CO 80221
Email:		Purchase Order #	PEDD# 1497-41-Rev0	Pace Quote:	Contract# 758938
Phone:	Fax:	Project Name:	Soil Sampling	Pace Project Manager:	Jennifer Gross
Requested Due Date:	*48 Hours*	Project #:	1497	Pace Profile #:	*36447 / 3*

Regulatory Agency
State / Location
WA / Freeman

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other DI Water	Methanol	Analyses Test Y/N	8260 Full List	Dry Weight											
1	PH-01			6/27/19	13:15		4	1					2	1		X	X									001
2	PH-02				13:25											X	X									002
3	PH-03				13:40											X	X									003
4	PH-04				13:50											X	X									004
5	PH-05				14:05											X	X									005
6	PH-06				14:10											X	X									006
7	PH-07				14:25											X	X									007
8	PH-08				14:35											X	X									~~008~~ 009
9	Trip Blank															X	X									~~009~~ 008 6/28/19
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	/ Jacobs	6-27-18	16:00	PACE	06/28/18	1155	3.6	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steve Demus

SIGNATURE of SAMPLER:

DATE Signed: 6-27-19

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M HILL - UPRR

Project #: WO# : 10437471
PM: JMG Due Date: 07/02/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4496 7785 2804

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: PB, Foam **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.6 **Cooler Temp Corrected (°C):** 3.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** Tmuf **Date and Initials of Person Examining Contents:** ST 6/28/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☒ Yes	☐ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	~~☒ No~~ ST 6/28/19		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☒ Yes	☐ No		12. EACH SAMPLES CONTAINERS PACKED TOGETHER/INDIVIDUALLY. THE BAG FOR EACH SET WAS LABELED, BUT CONTAINERS WERE NOT.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☒ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 042318-3				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: Certs not required for dichlorodifluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1250	Temp: 3.6	Corrected Temp: 3.6
Time: 1310	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 06/28/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce ... thi]s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437856

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437856001	**062718-Asher**	Water	06/27/18 13:00	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437856001	**062718-Asher**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548931

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437860001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2983991)
  - Carbon tetrachloride

Additional Comments:

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Asher (Lab ID: 10437856001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2983988)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437856

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2983988)
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2983989)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2983990)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2983991)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Sample: 062718-Asher **Lab ID: 10437856001** Collected: 06/27/18 13:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:44	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:44	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:44	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:44	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 04:44	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:44	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:44	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:44	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 04:44	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 04:44	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:44	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:44	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 04:44	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 04:44	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:44	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 04:44	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 04:44	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 04:44	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:44	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:44	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 04:44	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:44	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 04:44	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 04:44	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 04:44	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 04:44	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:44	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 04:44	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 04:44	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 04:44	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 04:44	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 04:44	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 04:44	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 04:44	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 04:44	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 04:44	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 04:44	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 04:44	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 04:44	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 04:44	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 04:44	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:44	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 04:44	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 04:44	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 04:44	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:44	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437856

Sample: 062718-Asher **Lab ID: 10437856001** Collected: 06/27/18 13:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 04:44	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 04:44	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 04:44	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 04:44	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:44	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:44	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 04:44	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:44	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:44	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 04:44	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 04:44	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 04:44	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:44	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 04:44	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 04:44	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 04:44	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 04:44	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 04:44	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 04:44	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 04:44	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:44	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:44	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 04:44	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 04:44	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 04:44	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:44	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:44	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:44	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 04:44	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 04:44	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:44	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:44	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:44	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 04:44	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 04:44	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 04:44	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 04:44	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

QC Batch: 548931 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437856001

METHOD BLANK: 2983988 | Matrix: Water
Associated Lab Samples: 10437856001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 00:01	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 00:01	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 00:01	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 00:01	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 00:01	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 00:01	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 00:01	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 00:01	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 00:01	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 00:01	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 00:01	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 00:01	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 00:01	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 00:01	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 00:01	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 00:01	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 00:01	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/07/18 00:01	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 00:01	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

METHOD BLANK: 2983988 Matrix: Water
Associated Lab Samples: 10437856001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 00:01	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 00:01	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 00:01	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 00:01	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 00:01	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 00:01	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
Methylene Chloride	ug/L	1.2J	4.0	0.98	07/07/18 00:01	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 00:01	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 00:01	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 00:01	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 00:01	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 00:01	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 00:01	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 00:01	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 00:01	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 00:01	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 00:01	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 00:01	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/07/18 00:01	
4-Bromofluorobenzene (S)	%.	99	75-125		07/07/18 00:01	
Toluene-d8 (S)	%.	96	75-125		07/07/18 00:01	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.7	104	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.6	98	72-130	
1,2,3-Trichloropropane	ug/L	20	20.9	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	41.2	82	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,2-Dichloroethane	ug/L	20	20.9	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.5	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.4	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.5	103	75-125	
1,3-Dichloropropane	ug/L	20	20.7	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	442	111	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.3	96	64-130	N2
2,2-Dichloropropane	ug/L	20	17.5	87	68-129	
2-Butanone (MEK)	ug/L	100	122	122	65-126	
2-Chlorotoluene	ug/L	20	18.9	95	75-125	
2-Hexanone	ug/L	100	102	102	75-134	
4-Chlorotoluene	ug/L	20	19.4	97	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	218	109	63-149	
Acrylonitrile	ug/L	200	227	113	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.5	97	75-125	
Bromochloromethane	ug/L	20	20.8	104	75-125	
Bromodichloromethane	ug/L	20	18.5	93	75-125	
Bromoform	ug/L	20	15.3	77	70-125	
Bromomethane	ug/L	20	18.5	92	30-145	
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	19.1	95	75-125	
Chlorobenzene	ug/L	20	19.8	99	75-125	
Chloroethane	ug/L	20	22.5	112	73-131	
Chloroform	ug/L	20	20.9	105	75-125	
Chloromethane	ug/L	20	20.6	103	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.3	102	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.9	90	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.6	88	75-125	
Dibromomethane	ug/L	20	20.0	100	75-125	
Dichlorodifluoromethane	ug/L	20	20.3	101	64-127	
Dichlorofluoromethane	ug/L	20	21.2	106	75-125	N2
Diisopropyl ether	ug/L	20	21.3	106	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.8	104	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.3	96	75-125	
m&p-Xylene	ug/L	40	39.9	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	20.5	103	72-125	
n-Butylbenzene	ug/L	20	20.1	100	75-125	
n-Propylbenzene	ug/L	20	19.7	98	75-125	
Naphthalene	ug/L	20	17.7	88	61-136	
o-Xylene	ug/L	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	20	19.5	98	75-125	
sec-Butylbenzene	ug/L	20	19.8	99	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.9	94	75-125	
tert-Butyl Alcohol	ug/L	200	215	107	75-125	
tert-Butylbenzene	ug/L	20	19.0	95	75-125	
Tetrachloroethene	ug/L	20	20.3	101	75-125	
Tetrahydrofuran	ug/L	200	201	101	64-150	
Toluene	ug/L	20	19.4	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	40.5	81	57-126	
Trichloroethene	ug/L	20	21.5	108	75-125	
Trichlorofluoromethane	ug/L	20	21.3	106	74-126	
Vinyl acetate	ug/L	20	18.2	91	72-129	
Vinyl chloride	ug/L	20	21.5	107	71-130	
Xylene (Total)	ug/L	60	59.5	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			95	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.3	19.3	92	97	75-125	5	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.3	22.2	106	111	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.6	20.9	98	104	75-125	6	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.5	20.2	98	101	75-125	4	30	

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Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.7	23.9	114	120	75-136	5	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.7	21.6	103	108	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	22.1	23.4	110	117	75-127	6	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	22.0	104	110	75-129	6	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.4	21.5	102	107	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.5	20.4	98	102	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.7	19.6	93	98	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.2	20.2	96	101	71-125	5	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	39.5	41.3	79	83	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.1	21.3	100	106	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.5	20.3	98	102	75-125	4	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.8	21.0	99	105	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.4	43.6	104	109	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.4	21.5	102	108	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.6	20.6	98	103	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.6	20.7	98	104	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.6	98	103	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.6	20.7	98	104	74-125	5	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	422	430	105	108	67-128	2	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.8	21.2	99	106	65-150	7	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.9	18.3	90	92	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	105	114	105	114	59-125	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	18.6	19.7	93	99	73-126	6	30	
2-Hexanone	ug/L	<0.88	100	100	94.4	96.2	94	96	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.3	20.1	96	100	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	98.8	101	99	101	73-125	2	30	
Acetone	ug/L	<9.2	100	100	93.0	99.5	93	100	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	194	209	97	105	53-150	8	30	
Acrylonitrile	ug/L	<0.91	200	200	202	213	101	107	69-127	5	30	
Benzene	ug/L	<0.10	20	20	20.3	21.4	102	107	74-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	19.0	20.8	95	104	75-125	9	30	
Bromochloromethane	ug/L	<0.27	20	20	20.1	21.2	100	106	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.5	19.2	92	96	75-125	4	30	
Bromoform	ug/L	<0.80	20	20	14.6	15.6	73	78	68-125	6	30	
Bromomethane	ug/L	<1.8	20	20	19.1	21.0	95	105	37-149	9	30	
Carbon disulfide	ug/L	0.12J	20	20	17.8	18.9	88	94	66-139	6	30	
Carbon tetrachloride	ug/L	202	20	20	220	238	86	177	75-127	8	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.6	20.5	98	102	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.7	106	108	73-134	2	30	
Chloroform	ug/L	8.8	20	20	29.0	30.0	101	106	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	20.2	20.4	101	102	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.4	21.4	102	107	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.7	18.0	84	90	71-125	7	30	
Dibromochloromethane	ug/L	<0.12	20	20	17.3	18.3	86	92	75-125	6	30	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.2	21.8	106	109	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.0	21.3	105	106	75-126	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	20.7	21.7	104	108	66-131	4	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.7	20.0	94	100	74-125	7	30	
Ethylbenzene	ug/L	<0.14	20	20	19.9	20.6	99	103	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20.9	21.9	104	110	60-150	5	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.1	20.8	101	104	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	39.9	41.6	100	104	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.2	20.1	96	100	75-125	5	30	
Methylene Chloride	ug/L	<0.98	20	20	19.0	20.0	95	100	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	20.3	22.0	102	110	73-140	8	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.4	20.7	97	104	75-126	7	30	
Naphthalene	ug/L	<0.48	20	20	18.7	19.9	93	99	61-136	6	30	
o-Xylene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-125	5	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.2	20.6	96	103	73-133	7	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.6	21.1	98	106	75-132	7	30	
Styrene	ug/L	<0.19	20	20	18.7	19.7	94	99	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.8	18.7	89	94	71-125	5	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	219	107	109	72-130	2	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.1	20.2	96	101	75-126	5	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	21.7	105	109	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	181	189	90	94	75-150	5	30	
Toluene	ug/L	<0.083	20	20	19.3	20.0	97	100	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.1	22.2	105	111	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.3	19.2	91	96	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	38.6	41.3	77	82	57-125	7	30	
Trichloroethene	ug/L	<0.15	20	20	20.5	21.4	102	107	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.2	21.6	106	108	75-135	2	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.7	89	94	57-136	5	30	
Vinyl chloride	ug/L	<0.092	20	20	22.1	22.7	110	113	74-141	3	30	
Xylene (Total)	ug/L	<0.31	60	60	59.6	62.4	99	104	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.						105	105	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437856

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437856

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437856001	**062718-Asher**	EPA 8260B	548931		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

WO#: 10437856

10437856

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	062718-Asher	WT	G	6/27	1300	—	—	—	3				X				X											001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	Justin Jacobs	6/29/18	1300	[illegible] Pace	6/30/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.6 4.3			
							3.2 4.8			
							~~6.4~~	DTC 6/30		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 6/27/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority:

WO# : 10437856
PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill **Project #:**

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7 **Cooler Temp Corrected (°C):** 3.3, 3.5, 4.6, 4.7, 3.2, 4.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/28/18 JT

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☒ Yes~~	☒ No		6. 6/28/18 JT
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No	JMG 070218	12. ~~062718-Stock labeled as 062718-SilVa verified by time~~
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. see exception
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1224	Temp: see above	Corrected Temp: see above
Time: 1241	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 070218

Note: Whenever there is a discrepancy affecting North Carolina compliance (missing samples, hold, incorrect preservative, out of temp, incorrect containers) form will be sent to the North Carolina DEHNR Certification Office (i.e out of

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718-Ashermell	0	2	1	3

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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437858

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437858001	**062718-Thorson**	Water	06/27/18 13:20	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437858001	**062718-Thorson**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437858001	**062718-Thorson**					
EPA 8260B	Carbon disulfide	0.11J	ug/L	1.0	07/05/18 13:36	B

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548633

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548633 [MSV/4454 (Lab ID: 2982456)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 548633

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- 062718-Thorson (Lab ID: 10437858001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2982456)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548633

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- LCS (Lab ID: 2982457)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2982458)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2982459)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Sample: 062718-Thorson **Lab ID: 10437858001** Collected: 06/27/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/05/18 13:36	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/05/18 13:36	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/05/18 13:36	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/05/18 13:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/05/18 13:36	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/05/18 13:36	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/05/18 13:36	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/05/18 13:36	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/05/18 13:36	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/05/18 13:36	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/05/18 13:36	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/05/18 13:36	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/05/18 13:36	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/05/18 13:36	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/05/18 13:36	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/05/18 13:36	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/05/18 13:36	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/05/18 13:36	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/05/18 13:36	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/05/18 13:36	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/05/18 13:36	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/05/18 13:36	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/05/18 13:36	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/05/18 13:36	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/05/18 13:36	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/05/18 13:36	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/05/18 13:36	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/05/18 13:36	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/05/18 13:36	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/05/18 13:36	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/05/18 13:36	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/05/18 13:36	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/05/18 13:36	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/05/18 13:36	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/05/18 13:36	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/05/18 13:36	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/05/18 13:36	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/05/18 13:36	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/05/18 13:36	74-83-9	
Carbon disulfide	**0.11J**	ug/L	1.0	0.078	1		07/05/18 13:36	75-15-0	B
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/05/18 13:36	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/05/18 13:36	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/05/18 13:36	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/05/18 13:36	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/05/18 13:36	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/05/18 13:36	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Sample: 062718-Thorson **Lab ID: 10437858001** Collected: 06/27/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/05/18 13:36	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/05/18 13:36	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/05/18 13:36	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/05/18 13:36	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/05/18 13:36	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/05/18 13:36	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/05/18 13:36	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/05/18 13:36	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/05/18 13:36	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/05/18 13:36	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/05/18 13:36	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/05/18 13:36	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/05/18 13:36	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/05/18 13:36	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/05/18 13:36	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/05/18 13:36	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/05/18 13:36	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/05/18 13:36	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/05/18 13:36	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/05/18 13:36	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/05/18 13:36	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/05/18 13:36	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/05/18 13:36	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/05/18 13:36	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/05/18 13:36	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/05/18 13:36	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/05/18 13:36	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/05/18 13:36	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/05/18 13:36	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/05/18 13:36	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/05/18 13:36	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/05/18 13:36	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/05/18 13:36	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/05/18 13:36	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		07/05/18 13:36	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/05/18 13:36	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		07/05/18 13:36	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

QC Batch: 548633 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437858001

METHOD BLANK: 2982456 | Matrix: Water
Associated Lab Samples: 10437858001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/05/18 12:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/05/18 12:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/05/18 12:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/05/18 12:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/05/18 12:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/05/18 12:25	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/05/18 12:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/05/18 12:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/05/18 12:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/05/18 12:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/05/18 12:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/05/18 12:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/05/18 12:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/05/18 12:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/05/18 12:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/05/18 12:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/05/18 12:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/05/18 12:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/05/18 12:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/05/18 12:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/05/18 12:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/05/18 12:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/05/18 12:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/05/18 12:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/05/18 12:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/05/18 12:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/05/18 12:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/05/18 12:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/05/18 12:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/05/18 12:25	
Acetone	ug/L	<9.2	20.0	9.2	07/05/18 12:25	
Acrolein	ug/L	<1.2	10.0	1.2	07/05/18 12:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/05/18 12:25	
Benzene	ug/L	<0.10	0.50	0.10	07/05/18 12:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/05/18 12:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/05/18 12:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/05/18 12:25	
Bromoform	ug/L	<0.80	4.0	0.80	07/05/18 12:25	
Bromomethane	ug/L	<1.8	4.0	1.8	07/05/18 12:25	
Carbon disulfide	ug/L	0.094J	1.0	0.078	07/05/18 12:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/05/18 12:25	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

METHOD BLANK: 2982456 Matrix: Water

Associated Lab Samples: 10437858001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/05/18 12:25	
Chloroethane	ug/L	<0.49	1.0	0.49	07/05/18 12:25	
Chloroform	ug/L	<0.45	1.0	0.45	07/05/18 12:25	
Chloromethane	ug/L	<0.16	4.0	0.16	07/05/18 12:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/05/18 12:25	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/05/18 12:25	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/05/18 12:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/05/18 12:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/05/18 12:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/05/18 12:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/05/18 12:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/05/18 12:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/05/18 12:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/05/18 12:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/05/18 12:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/05/18 12:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/05/18 12:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/05/18 12:25	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/05/18 12:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/05/18 12:25	
Naphthalene	ug/L	<0.48	1.0	0.48	07/05/18 12:25	
o-Xylene	ug/L	<0.16	0.50	0.16	07/05/18 12:25	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/05/18 12:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/05/18 12:25	
Styrene	ug/L	<0.19	0.50	0.19	07/05/18 12:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/05/18 12:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/05/18 12:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/05/18 12:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/05/18 12:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/05/18 12:25	
Toluene	ug/L	<0.083	0.50	0.083	07/05/18 12:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/05/18 12:25	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/05/18 12:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/05/18 12:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/05/18 12:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/05/18 12:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/05/18 12:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/05/18 12:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/05/18 12:25	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		07/05/18 12:25	
4-Bromofluorobenzene (S)	%.	100	75-125		07/05/18 12:25	
Toluene-d8 (S)	%.	100	75-125		07/05/18 12:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

LABORATORY CONTROL SAMPLE: 2982457

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.1	105	75-125	
1,1,1-Trichloroethane	ug/L	20	20.7	103	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.1	105	75-125	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.2	106	72-125	
1,1-Dichloroethane	ug/L	20	20.3	102	75-125	
1,1-Dichloroethene	ug/L	20	20.3	101	73-125	
1,1-Dichloropropene	ug/L	20	20.9	104	73-125	
1,2,3-Trichlorobenzene	ug/L	20	21.5	107	72-130	
1,2,3-Trichloropropane	ug/L	20	21.2	106	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.9	104	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.3	102	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	50.3	101	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.8	109	75-125	
1,2-Dichlorobenzene	ug/L	20	20.3	102	75-125	
1,2-Dichloroethane	ug/L	20	20.2	101	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.7	102	75-125	N2
1,2-Dichloropropane	ug/L	20	20.5	102	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.6	103	75-125	
1,3-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,3-Dichloropropane	ug/L	20	21.1	105	75-125	
1,4-Dichlorobenzene	ug/L	20	20.7	104	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	401	100	75-125	
2,2,4-Trimethylpentane	ug/L	20	21.3	106	64-130	N2
2,2-Dichloropropane	ug/L	20	20.5	103	68-129	
2-Butanone (MEK)	ug/L	100	112	112	65-126	
2-Chlorotoluene	ug/L	20	19.6	98	75-125	
2-Hexanone	ug/L	100	107	107	75-134	
4-Chlorotoluene	ug/L	20	20.8	104	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	75-131	
Acetone	ug/L	100	107	107	68-150	
Acrolein	ug/L	200	215	107	63-149	
Acrylonitrile	ug/L	200	217	108	75-125	
Benzene	ug/L	20	20.7	103	75-125	
Bromobenzene	ug/L	20	20.2	101	75-125	
Bromochloromethane	ug/L	20	20.6	103	75-125	
Bromodichloromethane	ug/L	20	21.4	107	75-125	
Bromoform	ug/L	20	21.5	108	70-125	
Bromomethane	ug/L	20	23.5	118	30-145	
Carbon disulfide	ug/L	20	21.0	105	67-125	
Carbon tetrachloride	ug/L	20	20.5	103	75-125	
Chlorobenzene	ug/L	20	20.2	101	75-125	
Chloroethane	ug/L	20	20.9	105	73-131	
Chloroform	ug/L	20	20.5	102	75-125	
Chloromethane	ug/L	20	19.8	99	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.4	102	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.9	104	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

LABORATORY CONTROL SAMPLE: 2982457

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.8	109	75-125	
Dibromomethane	ug/L	20	20.2	101	75-125	
Dichlorodifluoromethane	ug/L	20	19.7	99	64-127	
Dichlorofluoromethane	ug/L	20	19.7	99	75-125	N2
Diisopropyl ether	ug/L	20	20.5	103	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.6	103	75-125	
Ethylbenzene	ug/L	20	20.9	104	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.1	106	75-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	106	75-125	
m&p-Xylene	ug/L	40	41.9	105	75-125	
Methyl-tert-butyl ether	ug/L	20	20.4	102	75-125	
Methylene Chloride	ug/L	20	19.8	99	72-125	
n-Butylbenzene	ug/L	20	22.0	110	75-125	
n-Propylbenzene	ug/L	20	20.6	103	75-125	
Naphthalene	ug/L	20	20.5	103	61-136	
o-Xylene	ug/L	20	21.2	106	75-125	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	20.9	104	75-125	
Styrene	ug/L	20	21.0	105	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	229	115	75-125	
tert-Butylbenzene	ug/L	20	20.4	102	75-125	
Tetrachloroethene	ug/L	20	21.4	107	75-125	
Tetrahydrofuran	ug/L	200	215	108	64-150	
Toluene	ug/L	20	20.1	101	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	22.2	111	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	52.0	104	57-126	
Trichloroethene	ug/L	20	21.1	105	75-125	
Trichlorofluoromethane	ug/L	20	20.1	100	74-126	
Vinyl acetate	ug/L	20	20.2	101	72-129	
Vinyl chloride	ug/L	20	21.2	106	71-130	
Xylene (Total)	ug/L	60	63.1	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			102	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982458 2982459

Parameter	Units	10437858001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	17.7	19.0	88	95	75-125	7	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.4	20.1	97	100	75-129	3	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	18.4	19.8	92	99	75-125	7	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	17.7	19.0	88	95	75-125	7	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982458 2982459

Parameter	Units	10437858001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.1	21.9	105	110	75-136	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	18.1	18.9	91	95	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	20.9	102	105	75-127	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	19.6	20.5	98	102	75-129	5	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.1	21.2	101	106	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.5	19.0	87	95	75-125	8	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	19.4	20.5	97	102	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	18.7	19.4	93	97	71-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	41.9	45.3	84	91	61-127	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.9	20.1	95	100	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.8	19.6	89	98	75-125	10	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.4	18.4	87	92	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.1	40.0	95	100	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	18.2	19.1	91	95	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	18.5	19.9	92	100	75-125	7	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	18.4	19.7	92	99	75-125	7	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	18.0	19.4	90	97	75-125	7	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.0	92	100	74-125	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	383	420	96	105	67-128	9	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.1	21.8	110	109	65-150	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	18.7	19.6	93	98	65-136	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	86.1	94.1	86	94	59-125	9	30	
2-Chlorotoluene	ug/L	<0.16	20	20	17.0	18.3	85	91	73-126	7	30	
2-Hexanone	ug/L	<0.88	100	100	83.5	90.1	84	90	68-138	8	30	
4-Chlorotoluene	ug/L	<0.13	20	20	18.2	19.7	91	99	75-125	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	84.6	91.0	85	91	73-125	7	30	
Acetone	ug/L	<9.2	100	100	86.1	94.1	86	94	75-150	9	30	
Acrolein	ug/L	<1.2	200	200	174	191	87	96	53-150	10	30	
Acrylonitrile	ug/L	<0.91	200	200	169	184	84	92	69-127	8	30	
Benzene	ug/L	<0.10	20	20	18.5	19.8	92	99	74-125	7	30	
Bromobenzene	ug/L	<0.21	20	20	18.2	19.8	91	99	75-125	8	30	
Bromochloromethane	ug/L	<0.27	20	20	18.2	19.3	91	97	75-125	6	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.3	19.6	92	98	75-125	6	30	
Bromoform	ug/L	<0.80	20	20	17.3	18.7	87	93	68-125	8	30	
Bromomethane	ug/L	<1.8	20	20	21.2	24.5	106	122	37-149	14	30	
Carbon disulfide	ug/L	0.11J	20	20	20.3	20.9	101	104	66-139	3	30	
Carbon tetrachloride	ug/L	<0.19	20	20	19.1	20.3	96	102	75-127	6	30	
Chlorobenzene	ug/L	<0.17	20	20	17.8	19.2	89	96	75-125	8	30	
Chloroethane	ug/L	<0.49	20	20	19.4	21.4	97	107	73-134	10	30	
Chloroform	ug/L	<0.45	20	20	17.7	18.9	88	94	71-125	7	30	
Chloromethane	ug/L	<0.16	20	20	18.6	20.2	93	101	58-133	8	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	20.0	94	100	75-125	7	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.7	18.6	88	93	71-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.8	19.6	94	98	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982458 2982459

Parameter	Units	10437858001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	17.7	18.7	88	93	75-125	6	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	20.0	22.4	100	112	70-150	11	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	18.5	20.5	93	103	75-126	10	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.1	18.6	90	93	66-131	3	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	17.3	18.4	86	92	74-125	6	30	
Ethylbenzene	ug/L	<0.14	20	20	18.0	19.5	90	97	75-125	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.6	23.8	118	119	60-150	1	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	18.6	20.3	93	101	75-125	9	30	
m&p-Xylene	ug/L	<0.31	40	40	36.1	39.5	90	99	75-125	9	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	17.3	18.5	87	93	75-125	7	30	
Methylene Chloride	ug/L	<0.98	20	20	16.7	17.5	84	88	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.5	22.4	107	112	73-140	4	30	
n-Propylbenzene	ug/L	<0.10	20	20	18.5	19.8	92	99	75-126	7	30	
Naphthalene	ug/L	<0.48	20	20	17.6	19.4	88	97	61-136	10	30	
o-Xylene	ug/L	<0.16	20	20	18.1	20.3	91	102	75-125	11	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.6	20.2	98	101	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.5	20.3	97	101	75-132	4	30	
Styrene	ug/L	<0.19	20	20	18.1	19.7	90	98	71-125	8	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.8	18.1	84	90	71-125	8	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	189	200	94	100	72-130	6	30	
tert-Butylbenzene	ug/L	<0.15	20	20	18.7	19.8	94	99	75-126	6	30	
Tetrachloroethene	ug/L	<0.17	20	20	19.4	21.3	97	106	75-125	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	181	192	90	96	75-150	6	30	
Toluene	ug/L	<0.083	20	20	17.9	19.1	90	96	74-125	6	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.3	20.0	97	100	75-125	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.0	20.1	95	101	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	43.6	45.8	87	91	57-125	5	30	
Trichloroethene	ug/L	<0.15	20	20	19.1	19.8	96	99	75-125	3	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.7	21.5	99	107	75-135	9	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	19.3	92	97	57-136	5	30	
Vinyl chloride	ug/L	<0.092	20	20	20.6	22.5	103	113	74-141	9	30	
Xylene (Total)	ug/L	<0.31	60	60	54.2	59.8	90	100	75-125	10	30	
1,2-Dichloroethane-d4 (S)	%.						103	104	75-125			
4-Bromofluorobenzene (S)	%.						102	100	75-125			
Toluene-d8 (S)	%.						101	101	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437858

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437858001	**062718-Thorson**	EPA 8260B	548633		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location

WO#: 10437858

10437858

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062718-Thorson	WT	G	6/27	1320	—	—	—	9				X				X										X		MS/MSD wi
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	3.3	Y	Y	Y
*Field filtered by client							3.5			
							~~5.1~~ 6/30			
							4.6			
							4.7 3.2 4.8			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10437858

PM: JMG Due Date: 07/10/18

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7

Cooler Temp Corrected (°C): 3.3, 3.5, 4.6, 4.7, 3.2, 4.8

Temp should be above freezing to 6°C

Correction Factor: +0.1

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Date and Initials of Person Examining Contents: 6/30/18 J

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☑ Yes~~	☑ No	6/30/18 J	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No	JMG 070218	12. ~~062718-Stark labeled as 062718-Silva verified by time~~
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. see exception 04
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1221	Temp: see above	Corrected Temp: see above
Time: 1241	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compli[ance samples, a copy of th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718-thonson	0	2	7	9

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437859

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437859001	**062718-Marlow**	Water	06/27/18 14:30	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437859001	**062718-Marlow**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437859001	**062718-Marlow**					
EPA 8260B	Carbon disulfide	0.16J	ug/L	1.0	07/06/18 03:19	
EPA 8260B	Carbon tetrachloride	116	ug/L	0.50	07/06/18 03:19	M1
EPA 8260B	Chloroform	8.5	ug/L	1.0	07/06/18 03:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548701

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437859001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2982803)
    - Carbon tetrachloride

Additional Comments:

Analyte Comments:

QC Batch: 548701

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Marlow (Lab ID: 10437859001)
    - Dichlorofluoromethane
- BLANK (Lab ID: 2982800)
    - 1,2-Dichloroethene (Total)
    - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548701

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2982800)
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2982801)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2982802)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2982803)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Sample: 062718-Marlow **Lab ID: 10437859001** Collected: 06/27/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/06/18 03:19	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/06/18 03:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/06/18 03:19	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/06/18 03:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/06/18 03:19	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/06/18 03:19	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 03:19	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 03:19	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/06/18 03:19	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/06/18 03:19	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 03:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 03:19	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/06/18 03:19	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/06/18 03:19	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/06/18 03:19	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/06/18 03:19	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/06/18 03:19	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/06/18 03:19	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/06/18 03:19	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 03:19	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/06/18 03:19	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 03:19	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/06/18 03:19	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/06/18 03:19	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/06/18 03:19	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/06/18 03:19	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 03:19	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/06/18 03:19	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/06/18 03:19	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/06/18 03:19	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/06/18 03:19	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/06/18 03:19	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/06/18 03:19	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/06/18 03:19	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/06/18 03:19	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/06/18 03:19	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/06/18 03:19	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/06/18 03:19	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/06/18 03:19	74-83-9	
Carbon disulfide	**0.16J**	ug/L	1.0	0.078	1		07/06/18 03:19	75-15-0	
Carbon tetrachloride	**116**	ug/L	0.50	0.19	1		07/06/18 03:19	56-23-5	M1
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 03:19	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/06/18 03:19	75-00-3	
Chloroform	**8.5**	ug/L	1.0	0.45	1		07/06/18 03:19	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/06/18 03:19	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/06/18 03:19	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Sample: 062718-Marlow **Lab ID: 10437859001** Collected: 06/27/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/06/18 03:19	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/06/18 03:19	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/06/18 03:19	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/06/18 03:19	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/06/18 03:19	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/06/18 03:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/06/18 03:19	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/06/18 03:19	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/06/18 03:19	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/06/18 03:19	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/06/18 03:19	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/06/18 03:19	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 03:19	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/06/18 03:19	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/06/18 03:19	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/06/18 03:19	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/06/18 03:19	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/06/18 03:19	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/06/18 03:19	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/06/18 03:19	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 03:19	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 03:19	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/06/18 03:19	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/06/18 03:19	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/06/18 03:19	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 03:19	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 03:19	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 03:19	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/06/18 03:19	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/06/18 03:19	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 03:19	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/06/18 03:19	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/06/18 03:19	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/06/18 03:19	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/06/18 03:19	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/06/18 03:19	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/06/18 03:19	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

QC Batch: 548701 — Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B — Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437859001

METHOD BLANK: 2982800 — Matrix: Water
Associated Lab Samples: 10437859001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/06/18 00:10	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/06/18 00:10	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/06/18 00:10	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/06/18 00:10	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/06/18 00:10	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/06/18 00:10	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/06/18 00:10	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/06/18 00:10	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/06/18 00:10	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/06/18 00:10	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/06/18 00:10	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/06/18 00:10	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/06/18 00:10	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/06/18 00:10	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/06/18 00:10	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/06/18 00:10	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/06/18 00:10	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/06/18 00:10	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/06/18 00:10	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/06/18 00:10	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/06/18 00:10	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/06/18 00:10	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/06/18 00:10	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/06/18 00:10	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/06/18 00:10	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/06/18 00:10	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/06/18 00:10	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/06/18 00:10	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/06/18 00:10	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/06/18 00:10	
Acetone	ug/L	<9.2	20.0	9.2	07/06/18 00:10	
Acrolein	ug/L	<1.2	10.0	1.2	07/06/18 00:10	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/06/18 00:10	
Benzene	ug/L	<0.10	0.50	0.10	07/06/18 00:10	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/06/18 00:10	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/06/18 00:10	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/06/18 00:10	
Bromoform	ug/L	<0.80	4.0	0.80	07/06/18 00:10	
Bromomethane	ug/L	<1.8	4.0	1.8	07/06/18 00:10	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/06/18 00:10	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/06/18 00:10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

METHOD BLANK: 2982800 Matrix: Water
Associated Lab Samples: 10437859001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/06/18 00:10	
Chloroethane	ug/L	<0.49	1.0	0.49	07/06/18 00:10	
Chloroform	ug/L	<0.45	1.0	0.45	07/06/18 00:10	
Chloromethane	ug/L	<0.16	4.0	0.16	07/06/18 00:10	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/06/18 00:10	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/06/18 00:10	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/06/18 00:10	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/06/18 00:10	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/06/18 00:10	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/06/18 00:10	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/06/18 00:10	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/06/18 00:10	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/06/18 00:10	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/06/18 00:10	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/06/18 00:10	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/06/18 00:10	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/06/18 00:10	
Methylene Chloride	ug/L	1.0J	4.0	0.98	07/06/18 00:10	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/06/18 00:10	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/06/18 00:10	
Naphthalene	ug/L	<0.48	1.0	0.48	07/06/18 00:10	
o-Xylene	ug/L	<0.16	0.50	0.16	07/06/18 00:10	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/06/18 00:10	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/06/18 00:10	
Styrene	ug/L	<0.19	0.50	0.19	07/06/18 00:10	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/06/18 00:10	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/06/18 00:10	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/06/18 00:10	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/06/18 00:10	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/06/18 00:10	
Toluene	ug/L	<0.083	0.50	0.083	07/06/18 00:10	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/06/18 00:10	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/06/18 00:10	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/06/18 00:10	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/06/18 00:10	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/06/18 00:10	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/06/18 00:10	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/06/18 00:10	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/06/18 00:10	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/06/18 00:10	
4-Bromofluorobenzene (S)	%.	103	75-125		07/06/18 00:10	
Toluene-d8 (S)	%.	99	75-125		07/06/18 00:10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

LABORATORY CONTROL SAMPLE: 2982801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.4	97	75-125	
1,1,1-Trichloroethane	ug/L	20	20.5	103	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.6	98	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.2	106	72-125	
1,1-Dichloroethane	ug/L	20	20.9	104	75-125	
1,1-Dichloroethene	ug/L	20	21.0	105	73-125	
1,1-Dichloropropene	ug/L	20	20.5	102	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-130	
1,2,3-Trichloropropane	ug/L	20	20.3	101	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.9	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	42.5	85	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.1	105	75-125	
1,2-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,2-Dichloroethane	ug/L	20	20.4	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.1	103	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.4	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.7	104	75-125	
1,4-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	442	110	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.4	97	64-130	N2
2,2-Dichloropropane	ug/L	20	18.1	91	68-129	
2-Butanone (MEK)	ug/L	100	112	112	65-126	
2-Chlorotoluene	ug/L	20	18.8	94	75-125	
2-Hexanone	ug/L	100	101	101	75-134	
4-Chlorotoluene	ug/L	20	19.5	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	75-131	
Acetone	ug/L	100	110	110	68-150	
Acrolein	ug/L	200	216	108	63-149	
Acrylonitrile	ug/L	200	220	110	75-125	
Benzene	ug/L	20	21.0	105	75-125	
Bromobenzene	ug/L	20	19.7	99	75-125	
Bromochloromethane	ug/L	20	21.2	106	75-125	
Bromodichloromethane	ug/L	20	19.3	97	75-125	
Bromoform	ug/L	20	16.7	83	70-125	
Bromomethane	ug/L	20	21.5	108	30-145	
Carbon disulfide	ug/L	20	19.4	97	67-125	
Carbon tetrachloride	ug/L	20	19.6	98	75-125	
Chlorobenzene	ug/L	20	19.6	98	75-125	
Chloroethane	ug/L	20	21.5	107	73-131	
Chloroform	ug/L	20	20.7	104	75-125	
Chloromethane	ug/L	20	21.1	106	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.5	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.5	92	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

LABORATORY CONTROL SAMPLE: 2982801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	20.1	101	75-125	
Dichlorodifluoromethane	ug/L	20	20.1	100	64-127	
Dichlorofluoromethane	ug/L	20	20.5	102	75-125	N2
Diisopropyl ether	ug/L	20	21.2	106	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.1	101	75-125	
Ethylbenzene	ug/L	20	20.1	101	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.8	94	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.7	98	75-125	
m&p-Xylene	ug/L	40	40.6	101	75-125	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	20.5	103	72-125	
n-Butylbenzene	ug/L	20	20.2	101	75-125	
n-Propylbenzene	ug/L	20	19.6	98	75-125	
Naphthalene	ug/L	20	18.3	92	61-136	
o-Xylene	ug/L	20	20.6	103	75-125	
p-Isopropyltoluene	ug/L	20	19.6	98	75-125	
sec-Butylbenzene	ug/L	20	19.9	100	75-125	
Styrene	ug/L	20	20.1	100	75-125	
tert-Amylmethyl ether	ug/L	20	19.1	96	75-125	
tert-Butyl Alcohol	ug/L	200	220	110	75-125	
tert-Butylbenzene	ug/L	20	19.3	97	75-125	
Tetrachloroethene	ug/L	20	20.6	103	75-125	
Tetrahydrofuran	ug/L	200	212	106	64-150	
Toluene	ug/L	20	19.7	98	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.4	97	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	41.8	83	57-126	
Trichloroethene	ug/L	20	21.2	106	75-125	
Trichlorofluoromethane	ug/L	20	20.2	101	74-126	
Vinyl acetate	ug/L	20	17.8	89	72-129	
Vinyl chloride	ug/L	20	21.0	105	71-130	
Xylene (Total)	ug/L	60	61.2	102	75-125	
1,2-Dichloroethane-d4 (S)	%.			104	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982802 2982803

Parameter	Units	10437859001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.3	19.1	92	95	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.2	21.4	101	107	75-129	6	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	18.8	19.6	94	98	75-125	4	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	18.6	19.2	93	96	75-125	3	30	

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982802 2982803

Parameter	Units	10437859001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.5	22.7	108	114	75-136	6	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.8	21.0	99	105	75-125	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.7	21.7	103	108	75-127	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.5	21.5	102	107	75-129	5	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.4	20.4	97	102	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.1	19.3	91	97	75-125	6	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.3	19.5	91	98	69-131	7	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	18.4	19.2	92	96	71-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	38.9	41.3	78	83	61-127	6	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.1	20.2	95	101	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	19.3	93	96	75-125	3	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.6	19.9	93	99	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.5	41.8	99	104	75-125	6	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.3	20.5	97	103	75-125	6	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.0	19.9	95	99	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	18.9	19.9	94	100	75-125	5	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	18.8	19.9	94	99	75-125	6	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.0	20.0	95	100	74-125	5	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	381	416	95	104	67-128	9	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.5	20.6	97	103	65-150	6	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.7	18.2	88	91	65-136	3	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	95.5	105	95	105	59-125	10	30	
2-Chlorotoluene	ug/L	<0.16	20	20	17.8	19.1	89	96	73-126	7	30	
2-Hexanone	ug/L	<0.88	100	100	86.8	94.0	87	94	68-138	8	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	19.4	95	97	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	91.1	96.6	91	97	73-125	6	30	
Acetone	ug/L	<9.2	100	100	94.3	98.2	94	98	75-150	4	30	
Acrolein	ug/L	<1.2	200	200	174	188	87	94	53-150	8	30	
Acrylonitrile	ug/L	<0.91	200	200	192	201	96	101	69-127	5	30	
Benzene	ug/L	<0.10	20	20	19.9	20.8	100	104	74-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	18.7	19.6	93	98	75-125	5	30	
Bromochloromethane	ug/L	<0.27	20	20	19.5	20.4	97	102	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.0	19.1	90	96	75-125	6	30	
Bromoform	ug/L	<0.80	20	20	15.5	16.1	78	81	68-125	4	30	
Bromomethane	ug/L	<1.8	20	20	22.7	23.4	114	117	37-149	3	30	
Carbon disulfide	ug/L	0.16J	20	20	19.5	20.5	97	102	66-139	5	30	
Carbon tetrachloride	ug/L	116	20	20	138	146	110	149	75-127	6	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.0	19.6	95	98	75-125	3	30	
Chloroethane	ug/L	<0.49	20	20	21.2	21.1	106	106	73-134	0	30	
Chloroform	ug/L	8.5	20	20	27.9	29.1	97	103	71-125	4	30	
Chloromethane	ug/L	<0.16	20	20	21.1	21.2	105	106	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.7	20.6	98	103	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.2	18.0	86	90	71-125	4	30	
Dibromochloromethane	ug/L	<0.12	20	20	17.4	18.3	87	91	75-125	5	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982802 2982803

Parameter	Units	10437859001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.6	19.4	93	97	75-125	4	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.0	20.7	105	103	70-150	1	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	20.3	20.2	101	101	75-126	0	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.9	20.4	94	102	66-131	8	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	19.6	91	98	74-125	7	30	
Ethylbenzene	ug/L	<0.14	20	20	19.4	20.1	97	100	75-125	4	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.8	21.1	99	105	60-150	6	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.1	20.3	95	101	75-125	6	30	
m&p-Xylene	ug/L	<0.31	40	40	39.4	40.2	98	101	75-125	2	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	17.9	19.3	90	97	75-125	7	30	
Methylene Chloride	ug/L	<0.98	20	20	18.3	19.2	91	96	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	19.9	20.6	100	103	73-140	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.2	19.8	96	99	75-126	3	30	
Naphthalene	ug/L	<0.48	20	20	18.2	19.2	91	96	61-136	5	30	
o-Xylene	ug/L	<0.16	20	20	19.5	20.2	98	101	75-125	4	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.3	19.7	96	99	73-133	2	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.1	19.9	96	100	75-132	4	30	
Styrene	ug/L	<0.19	20	20	19.1	19.6	96	98	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.5	18.2	87	91	71-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	227	106	114	72-130	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	18.7	19.5	94	97	75-126	4	30	
Tetrachloroethene	ug/L	<0.17	20	20	19.8	20.6	99	103	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	184	192	92	96	75-150	5	30	
Toluene	ug/L	<0.083	20	20	19.1	19.6	96	98	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.8	21.1	99	106	75-125	7	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.4	19.1	92	95	70-125	4	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	38.4	40.4	76	80	57-125	5	30	
Trichloroethene	ug/L	<0.15	20	20	20.2	21.0	101	105	75-125	4	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.1	21.0	105	105	75-135	0	30	
Vinyl acetate	ug/L	<1.1	20	20	16.6	17.7	83	88	57-136	6	30	
Vinyl chloride	ug/L	<0.092	20	20	21.7	21.9	109	109	74-141	1	30	
Xylene (Total)	ug/L	<0.31	60	60	58.9	60.4	98	101	75-125	3	30	
1,2-Dichloroethane-d4 (S)	%.						104	105	75-125			
4-Bromofluorobenzene (S)	%.						97	98	75-125			
Toluene-d8 (S)	%.						101	100	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437859

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437859001	**062718-Marlow**	EPA 8260B	548701		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location

WO# : 10437859

10437859

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	062718-Marlow	WT	G	6/27	1430	—	—	—	9				X				X										X	MS/MSD wi
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	Justin Eric Jacobs	6/29/18	1530	Pace	6/30/18	930	3.3, 2.5, ~~4.1~~ 4.6, 4.7, 3.2, 4.8	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical

Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
Document No.: F-MN-L-210-rev.25	Issuing Authority:

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10437859

PM: JMG **Due Date: 07/10/18**

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7 **Cooler Temp Corrected (°C):** 3.3, 3.5, 4.6, 4.7, 3.2, 4.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/30/18 JT

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5. JT
Short Hold Time Analysis (<72 hr)?	~~Yes~~	☑ No	6/30/18	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No	JMG 070218	12. ~~062718-Stark labeled as 062718-SVE verified by time~~
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. see exception
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1229 Time: 1241	Temp: see above put in cooler	Corrected Temp: see above
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina complianc hold, incorrect preservative, out of temp, incorrect containers) 'orm will be sent to the North Carolina DEHNR Certification Office (i.e out of

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718-Marlon	2	2	5	9

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July 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437860

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437860001	**062718-Randall**	Water	06/27/18 15:20	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437860001	**062718-Randall**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437860001	**062718-Randall**					
EPA 8260B	Carbon disulfide	0.12J	ug/L	1.0	07/07/18 01:12	
EPA 8260B	Carbon tetrachloride	202	ug/L	0.50	07/07/18 01:12	M1
EPA 8260B	Chloroform	8.8	ug/L	1.0	07/07/18 01:12	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437860

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548931

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437860001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2983991)
  - Carbon tetrachloride

Additional Comments:

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Randall (Lab ID: 10437860001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2983988)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 10, 2018

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2983988)
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2983989)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2983990)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2983991)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Sample: 062718-Randall **Lab ID: 10437860001** Collected: 06/27/18 15:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:12	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:12	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 01:12	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:12	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:12	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:12	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 01:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 01:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:12	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:12	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:12	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:12	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 01:12	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 01:12	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 01:12	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 01:12	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 01:12	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:12	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 01:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 01:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 01:12	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 01:12	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:12	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 01:12	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:12	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:12	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:12	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:12	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 01:12	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 01:12	74-83-9	
Carbon disulfide	**0.12J**	ug/L	1.0	0.078	1		07/07/18 01:12	75-15-0	
Carbon tetrachloride	**202**	ug/L	0.50	0.19	1		07/07/18 01:12	56-23-5	M1
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:12	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 01:12	75-00-3	
Chloroform	**8.8**	ug/L	1.0	0.45	1		07/07/18 01:12	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:12	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:12	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Sample: 062718-Randall **Lab ID: 10437860001** Collected: 06/27/18 15:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 01:12	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 01:12	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 01:12	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 01:12	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:12	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:12	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 01:12	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 01:12	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 01:12	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:12	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 01:12	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 01:12	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 01:12	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 01:12	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 01:12	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 01:12	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 01:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:12	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:12	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:12	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:12	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:12	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:12	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:12	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:12	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 01:12	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:12	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:12	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 01:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 01:12	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 01:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/07/18 01:12	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

QC Batch: 548931 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437860001

METHOD BLANK: 2983988 | Matrix: Water
Associated Lab Samples: 10437860001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 00:01	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 00:01	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 00:01	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 00:01	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 00:01	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 00:01	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 00:01	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 00:01	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 00:01	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 00:01	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 00:01	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 00:01	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 00:01	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 00:01	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 00:01	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 00:01	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 00:01	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/07/18 00:01	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 00:01	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

METHOD BLANK: 2983988 Matrix: Water
Associated Lab Samples: 10437860001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 00:01	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 00:01	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 00:01	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 00:01	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 00:01	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 00:01	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
Methylene Chloride	ug/L	1.2J	4.0	0.98	07/07/18 00:01	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 00:01	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 00:01	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 00:01	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 00:01	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 00:01	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 00:01	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 00:01	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 00:01	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 00:01	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 00:01	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 00:01	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/07/18 00:01	
4-Bromofluorobenzene (S)	%.	99	75-125		07/07/18 00:01	
Toluene-d8 (S)	%.	96	75-125		07/07/18 00:01	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.7	104	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.6	98	72-130	
1,2,3-Trichloropropane	ug/L	20	20.9	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	41.2	82	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,2-Dichloroethane	ug/L	20	20.9	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.5	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.4	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.5	103	75-125	
1,3-Dichloropropane	ug/L	20	20.7	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	442	111	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.3	96	64-130	N2
2,2-Dichloropropane	ug/L	20	17.5	87	68-129	
2-Butanone (MEK)	ug/L	100	122	122	65-126	
2-Chlorotoluene	ug/L	20	18.9	95	75-125	
2-Hexanone	ug/L	100	102	102	75-134	
4-Chlorotoluene	ug/L	20	19.4	97	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	218	109	63-149	
Acrylonitrile	ug/L	200	227	113	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.5	97	75-125	
Bromochloromethane	ug/L	20	20.8	104	75-125	
Bromodichloromethane	ug/L	20	18.5	93	75-125	
Bromoform	ug/L	20	15.3	77	70-125	
Bromomethane	ug/L	20	18.5	92	30-145	
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	19.1	95	75-125	
Chlorobenzene	ug/L	20	19.8	99	75-125	
Chloroethane	ug/L	20	22.5	112	73-131	
Chloroform	ug/L	20	20.9	105	75-125	
Chloromethane	ug/L	20	20.6	103	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.3	102	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.9	90	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.6	88	75-125	
Dibromomethane	ug/L	20	20.0	100	75-125	
Dichlorodifluoromethane	ug/L	20	20.3	101	64-127	
Dichlorofluoromethane	ug/L	20	21.2	106	75-125	N2
Diisopropyl ether	ug/L	20	21.3	106	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.8	104	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.3	96	75-125	
m&p-Xylene	ug/L	40	39.9	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	20.5	103	72-125	
n-Butylbenzene	ug/L	20	20.1	100	75-125	
n-Propylbenzene	ug/L	20	19.7	98	75-125	
Naphthalene	ug/L	20	17.7	88	61-136	
o-Xylene	ug/L	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	20	19.5	98	75-125	
sec-Butylbenzene	ug/L	20	19.8	99	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.9	94	75-125	
tert-Butyl Alcohol	ug/L	200	215	107	75-125	
tert-Butylbenzene	ug/L	20	19.0	95	75-125	
Tetrachloroethene	ug/L	20	20.3	101	75-125	
Tetrahydrofuran	ug/L	200	201	101	64-150	
Toluene	ug/L	20	19.4	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	40.5	81	57-126	
Trichloroethene	ug/L	20	21.5	108	75-125	
Trichlorofluoromethane	ug/L	20	21.3	106	74-126	
Vinyl acetate	ug/L	20	18.2	91	72-129	
Vinyl chloride	ug/L	20	21.5	107	71-130	
Xylene (Total)	ug/L	60	59.5	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			95	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.3	19.3	92	97	75-125	5	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.3	22.2	106	111	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.6	20.9	98	104	75-125	6	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.5	20.2	98	101	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.7	23.9	114	120	75-136	5	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.7	21.6	103	108	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	22.1	23.4	110	117	75-127	6	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	22.0	104	110	75-129	6	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.4	21.5	102	107	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.5	20.4	98	102	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.7	19.6	93	98	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.2	20.2	96	101	71-125	5	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	39.5	41.3	79	83	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.1	21.3	100	106	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.5	20.3	98	102	75-125	4	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.8	21.0	99	105	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.4	43.6	104	109	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.4	21.5	102	108	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.6	20.6	98	103	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.6	20.7	98	104	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.6	98	103	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.6	20.7	98	104	74-125	5	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	422	430	105	108	67-128	2	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.8	21.2	99	106	65-150	7	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.9	18.3	90	92	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	105	114	105	114	59-125	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	18.6	19.7	93	99	73-126	6	30	
2-Hexanone	ug/L	<0.88	100	100	94.4	96.2	94	96	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.3	20.1	96	100	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	98.8	101	99	101	73-125	2	30	
Acetone	ug/L	<9.2	100	100	93.0	99.5	93	100	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	194	209	97	105	53-150	8	30	
Acrylonitrile	ug/L	<0.91	200	200	202	213	101	107	69-127	5	30	
Benzene	ug/L	<0.10	20	20	20.3	21.4	102	107	74-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	19.0	20.8	95	104	75-125	9	30	
Bromochloromethane	ug/L	<0.27	20	20	20.1	21.2	100	106	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.5	19.2	92	96	75-125	4	30	
Bromoform	ug/L	<0.80	20	20	14.6	15.6	73	78	68-125	6	30	
Bromomethane	ug/L	<1.8	20	20	19.1	21.0	95	105	37-149	9	30	
Carbon disulfide	ug/L	0.12J	20	20	17.8	18.9	88	94	66-139	6	30	
Carbon tetrachloride	ug/L	202	20	20	220	238	86	177	75-127	8	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.6	20.5	98	102	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.7	106	108	73-134	2	30	
Chloroform	ug/L	8.8	20	20	29.0	30.0	101	106	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	20.2	20.4	101	102	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.4	21.4	102	107	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.7	18.0	84	90	71-125	7	30	
Dibromochloromethane	ug/L	<0.12	20	20	17.3	18.3	86	92	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.2	21.8	106	109	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.0	21.3	105	106	75-126	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	20.7	21.7	104	108	66-131	4	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.7	20.0	94	100	74-125	7	30	
Ethylbenzene	ug/L	<0.14	20	20	19.9	20.6	99	103	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20.9	21.9	104	110	60-150	5	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.1	20.8	101	104	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	39.9	41.6	100	104	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.2	20.1	96	100	75-125	5	30	
Methylene Chloride	ug/L	<0.98	20	20	19.0	20.0	95	100	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	20.3	22.0	102	110	73-140	8	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.4	20.7	97	104	75-126	7	30	
Naphthalene	ug/L	<0.48	20	20	18.7	19.9	93	99	61-136	6	30	
o-Xylene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-125	5	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.2	20.6	96	103	73-133	7	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.6	21.1	98	106	75-132	7	30	
Styrene	ug/L	<0.19	20	20	18.7	19.7	94	99	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.8	18.7	89	94	71-125	5	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	219	107	109	72-130	2	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.1	20.2	96	101	75-126	5	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	21.7	105	109	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	181	189	90	94	75-150	5	30	
Toluene	ug/L	<0.083	20	20	19.3	20.0	97	100	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.1	22.2	105	111	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.3	19.2	91	96	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	38.6	41.3	77	82	57-125	7	30	
Trichloroethene	ug/L	<0.15	20	20	20.5	21.4	102	107	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.2	21.6	106	108	75-135	2	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.7	89	94	57-136	5	30	
Vinyl chloride	ug/L	<0.092	20	20	22.1	22.7	110	113	74-141	3	30	
Xylene (Total)	ug/L	<0.31	60	60	59.6	62.4	99	104	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.						105	105	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437860

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437860

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437860001	**062718-Randall**	EPA 8260B	548931		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

WO#: 10437860

10437860

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene R	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062718 - Randall	WT	G	6/27	1530	—	—	—	9				X				X										X		MS/MSD 001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	Jonathan Jacobs	6/28/18	1530	E Pace	6/30/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.6 4.7			
							3.2 4.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: Jon E

DATE Signed: 6/27/18

Pace Analytical

Document Name: **Sample Condition Upon Receipt Form - ESI**
Document No.: F-MN-L-210-rev.25

Document Revised: 02May2018
Page 1 of 2

WO#: 10437860
PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7

Cooler Temp Corrected (°C): 3.3, 3.5, 4.6, 4.7, 3.2, 4.8

Temp should be above freezing to 6°C **Correction Factor:** +0.1

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

USDA Regulated Soil (☑ N/A, water sample)

Date and Initials of Person Examining Contents: 6/30/18 J

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☑ Yes~~	☑ No		6. 6/30/18 JJ
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12. 062718-Stark labeled as 062718-Silva verified by time
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. see exception
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1220	Temp: see above	Corrected Temp: see above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718-Rendall	1	7	1	9

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437862

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437862001	**062718-Silva**	Water	06/27/18 17:20	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437862001	**062718-Silva**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Silva (Lab ID: 10437862001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2984419)
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Sample: 062718-Silva **Lab ID: 10437862001** Collected: 06/27/18 17:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:07	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:07	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:07	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 16:07	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:07	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:07	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:07	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:07	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 16:07	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:07	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:07	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 16:07	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:07	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:07	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:07	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:07	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:07	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:07	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:07	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 16:07	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:07	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 16:07	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 16:07	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 16:07	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 16:07	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:07	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 16:07	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 16:07	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 16:07	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 16:07	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:07	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 16:07	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:07	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:07	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:07	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:07	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 16:07	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 16:07	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 16:07	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 16:07	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:07	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 16:07	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 16:07	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:07	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:07	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Sample: 062718-Silva **Lab ID: 10437862001** Collected: 06/27/18 17:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 16:07	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 16:07	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 16:07	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 16:07	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:07	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:07	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:07	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:07	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:07	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 16:07	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 16:07	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 16:07	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:07	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 16:07	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 16:07	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 16:07	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 16:07	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 16:07	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 16:07	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 16:07	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:07	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:07	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:07	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:07	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:07	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:07	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:07	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:07	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 16:07	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:07	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:07	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:07	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:07	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 16:07	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1		07/07/18 16:07	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/07/18 16:07	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		07/07/18 16:07	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

QC Batch: 548998 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437862001

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437862001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437862001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548998

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437862

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437862001	**062718-Silva**	EPA 8260B	548998		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

WO# : 10437862

10437862

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/470 TAL Dissolved Metals)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	062718-Silva	WT	G	6/27	1720	—	—	—	3				X				X													001
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/28/18	1530	[signature] Pace	6/30/18	930	3.7 3.5	Y	Y	Y
*Field filtered by client							4.6 4.7			
							3.2 4.8			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical

Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
Document No.: F-MN-L-210-rev.25	Issuing Authority:

WO#: 10437862

PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.1 **Cooler Temp Corrected (°C):** 3.3, 3.5, 4.6, 4.7, 3.2, 4.8 **Biological Tissue Frozen?** ☐ Yes ☑ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/28/18 J

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☑ Yes~~	☑ No		6. 6/30/18 J
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12. 062718-Stark labeled w/ 062718-SilVa verified by tim
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1240	Temp: See above	Corrected Temp: See above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compl... his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437863

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437863001	**062718-Stark**	Water	06/27/18 17:35	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437863001	**062718-Stark**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Stark (Lab ID: 10437863001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2984419)
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Sample: 062718-Stark **Lab ID: 10437863001** Collected: 06/27/18 17:35 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:30	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:30	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 16:30	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:30	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:30	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:30	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:30	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 16:30	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:30	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:30	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 16:30	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:30	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:30	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:30	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:30	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:30	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:30	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:30	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 16:30	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:30	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 16:30	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 16:30	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 16:30	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 16:30	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:30	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 16:30	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 16:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 16:30	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 16:30	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:30	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 16:30	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:30	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:30	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:30	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:30	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 16:30	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 16:30	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 16:30	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 16:30	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:30	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 16:30	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 16:30	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:30	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:30	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Sample: 062718-Stark **Lab ID: 10437863001** Collected: 06/27/18 17:35 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 16:30	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 16:30	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 16:30	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 16:30	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:30	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:30	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:30	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:30	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 16:30	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 16:30	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 16:30	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:30	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 16:30	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 16:30	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 16:30	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 16:30	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 16:30	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 16:30	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 16:30	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:30	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:30	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:30	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:30	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:30	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:30	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:30	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:30	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 16:30	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:30	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:30	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:30	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:30	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 16:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 16:30	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/07/18 16:30	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/07/18 16:30	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

QC Batch: 548998 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437863001

METHOD BLANK: 2984419 | Matrix: Water
Associated Lab Samples: 10437863001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437863001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548998

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437863

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437863001	**062718-Stark**	EPA 8260B	548998		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

WO# : 10437863

10437863

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Requested Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK1	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	062718-Stark	WT	G	2018 6/27	1135	—	—	—	3				X				X													Cwi
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	6/28/18	1530	[signature] Pace	6/30/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.6 4.7			
							3.2 4.8			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 6/27/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority:

WO# : 10437863

PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7

Cooler Temp Corrected (°C): 3.3, 3.5, 4.6, 4.7, 3.2, 4.8

Temp should be above freezing to 6°C

Correction Factor: +0.1

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Date and Initials of Person Examining Contents: 6/30/18 J

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~Yes~~	☑ No		6. 6/30/18 J
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12. 062718-Stark labeled as 062718-Silva verified by time
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO₃ ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1230	Temp: See above	Corrected Temp: See above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance ... s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
0627 18 ~~Sitt~~ Stark 6/30/18		1	2	3

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July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437864

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437864001	**062718-LashawAg**	Water	06/27/18 16:45	06/30/18 09:30
10437864002	**062718-Lashaw**	Water	06/27/18 16:20	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437864001	**062718-LashawAg**	EPA 8260B	AEZ	83	PASI-M
10437864002	**062718-Lashaw**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437864001	**062718-LashawAg**					
EPA 8260B	Carbon disulfide	0.13J	ug/L	1.0	07/07/18 16:54	B
EPA 8260B	Carbon tetrachloride	2.0	ug/L	0.50	07/07/18 16:54	
10437864002	**062718-Lashaw**					
EPA 8260B	Carbon tetrachloride	0.27J	ug/L	0.50	07/07/18 17:17	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548998

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548998 [MSV/4456 (Lab ID: 2984419)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-Lashaw (Lab ID: 10437864002)
  - Dichlorofluoromethane
- 062718-LashawAg (Lab ID: 10437864001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Sample: 062718-LashawAg **Lab ID: 10437864001** Collected: 06/27/18 16:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:54	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:54	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 16:54	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:54	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:54	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:54	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:54	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 16:54	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:54	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 16:54	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:54	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:54	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:54	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:54	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:54	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:54	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:54	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 16:54	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:54	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 16:54	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 16:54	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 16:54	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 16:54	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:54	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 16:54	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 16:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 16:54	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 16:54	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:54	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 16:54	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:54	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 16:54	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 16:54	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 16:54	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 16:54	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 16:54	74-83-9	
Carbon disulfide	**0.13J**	ug/L	1.0	0.078	1		07/07/18 16:54	75-15-0	B
Carbon tetrachloride	**2.0**	ug/L	0.50	0.19	1		07/07/18 16:54	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:54	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 16:54	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 16:54	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 16:54	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:54	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437864

Sample: 062718-LashawAg **Lab ID: 10437864001** Collected: 06/27/18 16:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 16:54	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 16:54	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 16:54	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 16:54	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:54	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 16:54	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:54	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:54	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:54	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 16:54	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 16:54	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 16:54	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 16:54	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 16:54	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 16:54	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 16:54	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 16:54	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 16:54	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 16:54	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 16:54	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:54	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 16:54	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 16:54	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 16:54	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 16:54	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 16:54	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:54	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:54	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 16:54	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 16:54	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 16:54	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 16:54	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 16:54	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 16:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 16:54	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/07/18 16:54	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 16:54	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Sample: 062718-Lashaw **Lab ID: 10437864002** Collected: 06/27/18 16:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:17	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:17	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:17	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 17:17	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:17	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:17	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:17	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 17:17	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 17:17	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:17	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:17	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 17:17	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 17:17	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:17	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 17:17	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 17:17	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 17:17	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:17	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:17	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 17:17	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:17	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 17:17	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 17:17	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 17:17	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 17:17	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:17	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 17:17	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 17:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 17:17	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 17:17	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 17:17	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 17:17	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 17:17	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 17:17	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 17:17	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 17:17	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 17:17	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 17:17	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 17:17	75-15-0	
Carbon tetrachloride	**0.27J**	ug/L	0.50	0.19	1		07/07/18 17:17	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:17	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 17:17	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 17:17	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 17:17	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:17	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Sample: 062718-Lashaw **Lab ID: 10437864002** Collected: 06/27/18 16:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 17:17	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 17:17	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 17:17	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 17:17	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:17	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 17:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:17	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:17	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 17:17	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 17:17	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 17:17	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:17	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 17:17	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 17:17	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 17:17	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 17:17	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 17:17	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 17:17	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 17:17	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:17	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:17	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 17:17	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 17:17	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 17:17	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:17	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:17	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:17	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 17:17	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 17:17	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:17	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:17	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:17	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 17:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 17:17	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/07/18 17:17	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/07/18 17:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

QC Batch: 548998 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437864001, 10437864002

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437864001, 10437864002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437864001, 10437864002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548998

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437864

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437864001	**062718-LashawAg**	EPA 8260B	548998		
10437864002	**062718-Lashaw**	EPA 8260B	548998		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

WO# : 10437864

10437864

Requested Analysis Filtered (Y/N)

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene R	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	062718-Lashaw Ag	WT	G	6/27	1645	—	—	—	3				X				X													001
2	062718-Lashaw	↓	↓	↓	1620	↓	↓	↓	3				X				X													002
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	6/28/18	1530	[signature] Pace	6/28/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.4 4.5			
							3.2 4.8			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical

Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
Document No.: F-MN-L-210-rev.25	Issuing Authority:

WO# : 10437864
PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7

Cooler Temp Corrected (°C): 3.3, 3.5, 4.6, 4.7, 3.2, 4.8

Temp should be above freezing to 6°C Correction Factor: +0.1

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Date and Initials of Person Examining Contents: 6/30/18 JT

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☑ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☑ No 6/30/18 LO		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No	JMG 070218	12. ~~062718-Stark labeled as 062718-Silva verified by time~~
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1128	Temp: See above	Corrected Temp: See above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718 -Lashaw	0	1	2	3
062718-Lagshaw Ag	0	0	3	3

Pace Analytical
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437866

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437866001	**062718-Lang**	Water	06/27/18 16:00	06/30/18 09:30
10437866002	**062718-FD2**	Water	06/27/18 16:05	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437866001	**062718-Lang**	EPA 8260B	AEZ	83	PASI-M
10437866002	**062718-FD2**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-FD2 (Lab ID: 10437866002)
  - Dichlorofluoromethane
- 062718-Lang (Lab ID: 10437866001)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Sample: 062718-Lang **Lab ID: 10437866001** Collected: 06/27/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:41	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:41	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 17:41	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:41	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:41	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 17:41	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 17:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 17:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 17:41	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:41	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 17:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 17:41	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 17:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:41	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 17:41	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 17:41	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 17:41	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 17:41	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 17:41	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:41	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 17:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 17:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 17:41	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 17:41	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 17:41	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 17:41	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 17:41	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 17:41	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 17:41	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 17:41	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 17:41	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 17:41	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 17:41	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 17:41	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:41	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 17:41	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 17:41	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 17:41	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:41	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Sample: 062718-Lang **Lab ID: 10437866001** Collected: 06/27/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 17:41	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 17:41	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 17:41	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 17:41	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 17:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 17:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:41	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:41	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 17:41	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 17:41	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 17:41	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 17:41	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 17:41	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 17:41	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 17:41	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 17:41	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 17:41	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 17:41	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 17:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:41	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 17:41	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 17:41	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 17:41	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 17:41	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 17:41	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:41	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:41	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 17:41	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 17:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 17:41	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 17:41	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 17:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 17:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 17:41	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/07/18 17:41	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		07/07/18 17:41	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Sample: 062718-FD2 **Lab ID: 10437866002** Collected: 06/27/18 16:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 18:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 18:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 18:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:05	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 18:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 18:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 18:05	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 18:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 18:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 18:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 18:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 18:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 18:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 18:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 18:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 18:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 18:05	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 18:05	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 18:05	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 18:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Sample: 062718-FD2 **Lab ID: 10437866002** Collected: 06/27/18 16:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 18:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 18:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 18:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 18:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 18:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 18:05	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 18:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 18:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 18:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 18:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 18:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 18:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 18:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 18:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:05	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 18:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 18:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 18:05	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 18:05	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		07/07/18 18:05	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

QC Batch: 548998 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437866001, 10437866002

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437866001, 10437866002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437866001, 10437866002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548998

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437866

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437866001	**062718-Lang**	EPA 8260B	548998		
10437866002	**062718-FD2**	EPA 8260B	548998		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

WO# : 10437866

10437866

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene R	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	062718-Lang	WT	G	6/27	1600	—	—	—	3				X				X													w1
2	062718-FD2	↓	↓	↓	1605	↓	↓	↓	3				X				X													w2
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.6 4.7			
							3.2 4.8			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical

Document Name:	Document Revised: 02May2018
Sample Condition Upon Receipt Form - ESI	Page 1 of 2
Document No.:	Issuing Authority:
F-MN-L-210-rev.25	

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10437866

PM: JMG Due Date: 07/10/18

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1633 2406/2336/2417/2369/2347/2356

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.7 Cooler Temp Corrected (°C): 3.3, 3.5, 4.6, 4.7, 3.2, 4.8

Biological Tissue Frozen? ☐ Yes ☑ No ☐ NA

Temp should be above freezing to 6°C Correction Factor: +0.1

Date and Initials of Person Examining Contents: 6/30/18 J

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	~~☑ Yes~~	☑ No		6. 6/30/18 J
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No	JMG 070218	12. ~~062718-Stock labeled as 062718-S VOA verified by time~~
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1220	Temp: see above	Corrected Temp: see above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina complia... hold, incorrect preservative, out of temp, incorrect containers) this form will be sent to the North Carolina DEHNR Certification Office (i.e out of

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 12, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437867

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437867001	**062718-Asher**	Water	06/27/18 13:00	06/30/18 09:30
10437867002	**062718-Thorson**	Water	06/27/18 13:20	06/30/18 09:30
10437867003	**062718-Marlow**	Water	06/27/18 14:30	06/30/18 09:30
10437867004	**062718-Randall**	Water	06/27/18 15:20	06/30/18 09:30
10437867005	**062718-Lang**	Water	06/27/18 16:00	06/30/18 09:30
10437867006	**062718-Lashaw**	Water	06/27/18 16:20	06/30/18 09:30
10437867007	**062718-Silva**	Water	06/27/18 17:20	06/30/18 09:30
10437867008	**062718-Stark**	Water	06/27/18 17:35	06/30/18 09:30
10437867009	**062718-FD2**	Water	06/27/18 16:05	06/30/18 09:30
10437867010	**062718-LashawAg**	Water	06/27/18 16:45	06/30/18 09:30
10437867011	**Trip Blank**	Water	06/27/18 00:00	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437867001	**062718-Asher**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867002	**062718-Thorson**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867003	**062718-Marlow**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867004	**062718-Randall**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867005	**062718-Lang**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867006	**062718-Lashaw**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867007	**062718-Silva**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867008	**062718-Stark**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867009	**062718-FD2**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867010	**062718-LashawAg**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437867011	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437867001	**062718-Asher**					
EPA 6010D	Aluminum, Dissolved	17.2J	ug/L	200	07/09/18 17:10	
EPA 6010D	Barium, Dissolved	78.1	ug/L	10.0	07/09/18 17:10	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/09/18 17:10	
EPA 6010D	Calcium, Dissolved	65200	ug/L	500	07/09/18 17:10	
EPA 6010D	Chromium, Dissolved	0.85J	ug/L	10.0	07/09/18 17:10	
EPA 6010D	Copper, Dissolved	18.9	ug/L	10.0	07/09/18 17:10	
EPA 6010D	Iron, Dissolved	5.3J	ug/L	50.0	07/09/18 17:10	
EPA 6010D	Lead, Dissolved	3.0J	ug/L	10.0	07/09/18 17:10	
EPA 6010D	Magnesium, Dissolved	19300	ug/L	500	07/09/18 17:10	
EPA 6010D	Manganese, Dissolved	0.34J	ug/L	5.0	07/09/18 17:10	
EPA 6010D	Potassium, Dissolved	1190J	ug/L	2500	07/09/18 17:10	
EPA 6010D	Sodium, Dissolved	21000	ug/L	1000	07/09/18 17:10	
EPA 6010D	Vanadium, Dissolved	10.6J	ug/L	15.0	07/09/18 17:10	
EPA 6010D	Zinc, Dissolved	13.1J	ug/L	20.0	07/09/18 17:10	
SM 2320B	Alkalinity, Total as CaCO3	228	mg/L	5.0	07/11/18 09:59	
SM 2540C	Total Dissolved Solids	334	mg/L	20.0	07/03/18 15:26	
EPA 300.0	Chloride	8.3	mg/L	1.2	06/30/18 18:20	
EPA 300.0	Nitrate as N	7.5	mg/L	0.10	06/30/18 18:20	H3
EPA 300.0	Sulfate	31.4	mg/L	1.2	06/30/18 18:20	
EPA 353.2	Nitrogen, NO2 plus NO3	8.2	mg/L	1.0	07/11/18 13:04	
SM 5310C	Total Organic Carbon	2.0	mg/L	1.0	07/10/18 10:25	
10437867002	**062718-Thorson**					
EPA 6010D	Barium, Dissolved	51.0	ug/L	10.0	07/09/18 17:12	
EPA 6010D	Calcium, Dissolved	23200	ug/L	500	07/09/18 17:12	
EPA 6010D	Iron, Dissolved	1120	ug/L	50.0	07/09/18 17:12	
EPA 6010D	Magnesium, Dissolved	11700	ug/L	500	07/09/18 17:12	
EPA 6010D	Manganese, Dissolved	26.2	ug/L	5.0	07/09/18 17:12	
EPA 6010D	Potassium, Dissolved	3580	ug/L	2500	07/09/18 17:12	
EPA 6010D	Sodium, Dissolved	13500	ug/L	1000	07/09/18 17:12	
EPA 6010D	Vanadium, Dissolved	0.33J	ug/L	15.0	07/09/18 17:12	
EPA 6010D	Zinc, Dissolved	18.3J	ug/L	20.0	07/09/18 17:12	
SM 2320B	Alkalinity, Total as CaCO3	144	mg/L	5.0	07/11/18 10:03	
SM 2540C	Total Dissolved Solids	187	mg/L	10.0	07/02/18 16:20	
EPA 300.0	Chloride	1.2	mg/L	1.2	06/30/18 18:35	
EPA 300.0	Sulfate	3.2	mg/L	1.2	06/30/18 18:35	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	07/10/18 10:42	
10437867003	**062718-Marlow**					
EPA 6010D	Aluminum, Dissolved	20.2J	ug/L	200	07/09/18 17:20	
EPA 6010D	Barium, Dissolved	28.1	ug/L	10.0	07/09/18 17:20	
EPA 6010D	Calcium, Dissolved	46100	ug/L	500	07/09/18 17:20	
EPA 6010D	Copper, Dissolved	4.3J	ug/L	10.0	07/09/18 17:20	
EPA 6010D	Iron, Dissolved	6.2J	ug/L	50.0	07/09/18 17:20	
EPA 6010D	Lead, Dissolved	2.2J	ug/L	10.0	07/09/18 17:20	
EPA 6010D	Magnesium, Dissolved	13300	ug/L	500	07/09/18 17:20	
EPA 6010D	Manganese, Dissolved	0.25J	ug/L	5.0	07/09/18 17:20	
EPA 6010D	Potassium, Dissolved	1180J	ug/L	2500	07/09/18 17:20	

REPORT OF LABORATORY ANALYSIS

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437867003	**062718-Marlow**					
EPA 6010D	Sodium, Dissolved	11600	ug/L	1000	07/09/18 17:20	
EPA 6010D	Vanadium, Dissolved	8.5J	ug/L	15.0	07/09/18 17:20	
EPA 6010D	Zinc, Dissolved	27.0	ug/L	20.0	07/09/18 17:20	
SM 2320B	Alkalinity, Total as CaCO3	157	mg/L	5.0	07/11/18 10:17	
SM 2540C	Total Dissolved Solids	267	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	15.7	mg/L	1.2	06/30/18 19:38	M1
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	06/30/18 19:38	M1
EPA 300.0	Sulfate	13.1	mg/L	1.2	06/30/18 19:38	
EPA 353.2	Nitrogen, NO2 plus NO3	4.0	mg/L	0.50	07/11/18 13:06	
SM 5310C	Total Organic Carbon	2.2	mg/L	1.0	07/10/18 11:32	
10437867004	**062718-Randall**					
EPA 6010D	Barium, Dissolved	22.9	ug/L	10.0	07/09/18 17:32	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	07/09/18 17:32	
EPA 6010D	Calcium, Dissolved	46200	ug/L	500	07/09/18 17:32	
EPA 6010D	Copper, Dissolved	28.3	ug/L	10.0	07/09/18 17:32	
EPA 6010D	Iron, Dissolved	5.6J	ug/L	50.0	07/09/18 17:32	
EPA 6010D	Lead, Dissolved	2.2J	ug/L	10.0	07/09/18 17:32	
EPA 6010D	Magnesium, Dissolved	14500	ug/L	500	07/09/18 17:32	
EPA 6010D	Manganese, Dissolved	3.1J	ug/L	5.0	07/09/18 17:32	
EPA 6010D	Potassium, Dissolved	1230J	ug/L	2500	07/09/18 17:32	
EPA 6010D	Sodium, Dissolved	13700	ug/L	1000	07/09/18 17:32	
EPA 6010D	Vanadium, Dissolved	5.6J	ug/L	15.0	07/09/18 17:32	
EPA 6010D	Zinc, Dissolved	390	ug/L	20.0	07/09/18 17:32	
SM 2320B	Alkalinity, Total as CaCO3	194	mg/L	5.0	07/11/18 12:01	
SM 2540C	Total Dissolved Solids	245	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	6.9	mg/L	1.2	07/01/18 02:37	
EPA 300.0	Nitrate as N	1.8	mg/L	0.10	07/01/18 02:37	H3,M1
EPA 300.0	Sulfate	7.9	mg/L	1.2	07/01/18 02:37	
EPA 353.2	Nitrogen, NO2 plus NO3	1.9	mg/L	0.10	07/11/18 12:28	M1
SM 5310C	Total Organic Carbon	0.93J	mg/L	1.0	07/10/18 05:55	
10437867005	**062718-Lang**					
EPA 6010D	Aluminum, Dissolved	19.0J	ug/L	200	07/09/18 17:40	
EPA 6010D	Barium, Dissolved	16.6	ug/L	10.0	07/09/18 17:40	
EPA 6010D	Beryllium, Dissolved	0.23J	ug/L	5.0	07/09/18 17:40	
EPA 6010D	Calcium, Dissolved	43500	ug/L	500	07/09/18 17:40	
EPA 6010D	Chromium, Dissolved	0.59J	ug/L	10.0	07/09/18 17:40	
EPA 6010D	Cobalt, Dissolved	0.58J	ug/L	10.0	07/09/18 17:40	
EPA 6010D	Copper, Dissolved	16.9	ug/L	10.0	07/09/18 17:40	
EPA 6010D	Iron, Dissolved	132	ug/L	50.0	07/09/18 17:40	
EPA 6010D	Magnesium, Dissolved	12400	ug/L	500	07/09/18 17:40	
EPA 6010D	Manganese, Dissolved	10.2	ug/L	5.0	07/09/18 17:40	
EPA 6010D	Potassium, Dissolved	1020J	ug/L	2500	07/09/18 17:40	
EPA 6010D	Sodium, Dissolved	16200	ug/L	1000	07/09/18 17:40	
EPA 6010D	Vanadium, Dissolved	5.4J	ug/L	15.0	07/09/18 17:40	
EPA 6010D	Zinc, Dissolved	53.0	ug/L	20.0	07/09/18 17:40	
SM 2320B	Alkalinity, Total as CaCO3	196	mg/L	5.0	07/11/18 10:30	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437867005	**062718-Lang**					
SM 2540C	Total Dissolved Solids	231	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	1.8	mg/L	1.2	06/30/18 20:41	
EPA 300.0	Nitrate as N	0.46	mg/L	0.10	06/30/18 20:41	H3
EPA 300.0	Sulfate	3.6	mg/L	1.2	06/30/18 20:41	
EPA 353.2	Nitrogen, NO2 plus NO3	0.48	mg/L	0.10	07/11/18 12:01	
SM 5310C	Total Organic Carbon	0.84J	mg/L	1.0	07/10/18 12:56	
10437867006	**062718-Lashaw**					
EPA 6010D	Barium, Dissolved	9.1J	ug/L	10.0	07/09/18 17:41	
EPA 6010D	Calcium, Dissolved	25700	ug/L	500	07/09/18 17:41	
EPA 6010D	Copper, Dissolved	2.3J	ug/L	10.0	07/09/18 17:41	
EPA 6010D	Magnesium, Dissolved	11400	ug/L	500	07/09/18 17:41	
EPA 6010D	Manganese, Dissolved	0.27J	ug/L	5.0	07/09/18 17:41	
EPA 6010D	Potassium, Dissolved	3670	ug/L	2500	07/09/18 17:41	
EPA 6010D	Sodium, Dissolved	14400	ug/L	1000	07/09/18 17:41	
EPA 6010D	Vanadium, Dissolved	13.2J	ug/L	15.0	07/09/18 17:41	
EPA 6010D	Zinc, Dissolved	52.1	ug/L	20.0	07/09/18 17:41	
SM 2320B	Alkalinity, Total as CaCO3	152	mg/L	5.0	07/11/18 10:34	
SM 2540C	Total Dissolved Solids	199	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	1.5	mg/L	1.2	06/30/18 21:26	
EPA 300.0	Nitrate as N	1.3	mg/L	0.10	06/30/18 21:26	H3
EPA 300.0	Sulfate	4.8	mg/L	1.2	06/30/18 21:26	
EPA 353.2	Nitrogen, NO2 plus NO3	1.3	mg/L	0.10	07/11/18 12:02	
SM 5310C	Total Organic Carbon	0.57J	mg/L	1.0	07/10/18 13:12	
10437867007	**062718-Silva**					
EPA 6010D	Barium, Dissolved	28.5	ug/L	10.0	07/09/18 17:46	
EPA 6010D	Calcium, Dissolved	37200	ug/L	500	07/09/18 17:46	
EPA 6010D	Cobalt, Dissolved	0.85J	ug/L	10.0	07/09/18 17:46	
EPA 6010D	Copper, Dissolved	26.7	ug/L	10.0	07/09/18 17:46	
EPA 6010D	Magnesium, Dissolved	12200	ug/L	500	07/09/18 17:46	
EPA 6010D	Manganese, Dissolved	0.57J	ug/L	5.0	07/09/18 17:46	
EPA 6010D	Potassium, Dissolved	1340J	ug/L	2500	07/09/18 17:46	
EPA 6010D	Sodium, Dissolved	13300	ug/L	1000	07/09/18 17:46	
EPA 6010D	Vanadium, Dissolved	9.0J	ug/L	15.0	07/09/18 17:46	
EPA 6010D	Zinc, Dissolved	270	ug/L	20.0	07/09/18 17:46	
SM 2320B	Alkalinity, Total as CaCO3	166	mg/L	5.0	07/11/18 10:55	
SM 2540C	Total Dissolved Solids	231	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	2.3	mg/L	1.2	06/30/18 21:41	
EPA 300.0	Nitrate as N	2.2	mg/L	0.10	06/30/18 21:41	H3
EPA 300.0	Sulfate	10.0	mg/L	1.2	06/30/18 21:41	
EPA 353.2	Nitrogen, NO2 plus NO3	2.1	mg/L	0.50	07/11/18 13:09	
SM 5310C	Total Organic Carbon	1.6	mg/L	1.0	07/10/18 13:29	
10437867008	**062718-Stark**					
EPA 6010D	Barium, Dissolved	28.9	ug/L	10.0	07/09/18 17:48	
EPA 6010D	Cadmium, Dissolved	0.29J	ug/L	3.0	07/09/18 17:48	
EPA 6010D	Calcium, Dissolved	27300	ug/L	500	07/09/18 17:48	
EPA 6010D	Chromium, Dissolved	0.56J	ug/L	10.0	07/09/18 17:48	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437867008	**062718-Stark**					
EPA 6010D	Cobalt, Dissolved	1.8J	ug/L	10.0	07/09/18 17:48	
EPA 6010D	Copper, Dissolved	177	ug/L	10.0	07/09/18 17:48	
EPA 6010D	Iron, Dissolved	6.0J	ug/L	50.0	07/09/18 17:48	
EPA 6010D	Magnesium, Dissolved	11300	ug/L	500	07/09/18 17:48	
EPA 6010D	Manganese, Dissolved	20.5	ug/L	5.0	07/09/18 17:48	
EPA 6010D	Nickel, Dissolved	8.8J	ug/L	20.0	07/09/18 17:48	
EPA 6010D	Potassium, Dissolved	2960	ug/L	2500	07/09/18 17:48	
EPA 6010D	Sodium, Dissolved	14300	ug/L	1000	07/09/18 17:48	
EPA 6010D	Vanadium, Dissolved	3.7J	ug/L	15.0	07/09/18 17:48	
EPA 6010D	Zinc, Dissolved	20.6	ug/L	20.0	07/09/18 17:48	
SM 2320B	Alkalinity, Total as CaCO3	143	mg/L	5.0	07/11/18 10:59	
SM 2540C	Total Dissolved Solids	201	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	1.3	mg/L	1.2	06/30/18 21:56	
EPA 300.0	Nitrate as N	1.5	mg/L	0.10	06/30/18 21:56	H3
EPA 300.0	Sulfate	17.7	mg/L	1.2	06/30/18 21:56	
EPA 353.2	Nitrogen, NO2 plus NO3	1.7	mg/L	0.10	07/11/18 12:04	
SM 5310C	Total Organic Carbon	0.65J	mg/L	1.0	07/10/18 13:45	
10437867009	**062718-FD2**					
EPA 6010D	Barium, Dissolved	16.4	ug/L	10.0	07/09/18 17:50	
EPA 6010D	Calcium, Dissolved	43200	ug/L	500	07/09/18 17:50	
EPA 6010D	Copper, Dissolved	14.7	ug/L	10.0	07/09/18 17:50	
EPA 6010D	Iron, Dissolved	113	ug/L	50.0	07/09/18 17:50	
EPA 6010D	Magnesium, Dissolved	12300	ug/L	500	07/09/18 17:50	
EPA 6010D	Manganese, Dissolved	9.9	ug/L	5.0	07/09/18 17:50	
EPA 6010D	Potassium, Dissolved	998J	ug/L	2500	07/09/18 17:50	
EPA 6010D	Sodium, Dissolved	16300	ug/L	1000	07/09/18 17:50	
EPA 6010D	Vanadium, Dissolved	5.0J	ug/L	15.0	07/09/18 17:50	
EPA 6010D	Zinc, Dissolved	53.9	ug/L	20.0	07/09/18 17:50	
SM 2320B	Alkalinity, Total as CaCO3	194	mg/L	5.0	07/11/18 11:03	
SM 2540C	Total Dissolved Solids	223	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	1.7	mg/L	1.2	06/30/18 22:11	
EPA 300.0	Nitrate as N	0.45	mg/L	0.10	06/30/18 22:11	H3
EPA 300.0	Sulfate	2.2	mg/L	1.2	06/30/18 22:11	
EPA 353.2	Nitrogen, NO2 plus NO3	0.52	mg/L	0.10	07/11/18 12:05	
SM 5310C	Total Organic Carbon	0.48J	mg/L	1.0	07/10/18 14:01	
10437867010	**062718-LashawAg**					
EPA 6010D	Aluminum, Dissolved	17.3J	ug/L	200	07/09/18 17:51	
EPA 6010D	Barium, Dissolved	34.0	ug/L	10.0	07/09/18 17:51	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	07/09/18 17:51	
EPA 6010D	Calcium, Dissolved	31800	ug/L	500	07/09/18 17:51	
EPA 6010D	Iron, Dissolved	36.1J	ug/L	50.0	07/09/18 17:51	
EPA 6010D	Magnesium, Dissolved	12900	ug/L	500	07/09/18 17:51	
EPA 6010D	Manganese, Dissolved	33.3	ug/L	5.0	07/09/18 17:51	
EPA 6010D	Potassium, Dissolved	4190	ug/L	2500	07/09/18 17:51	
EPA 6010D	Sodium, Dissolved	16300	ug/L	1000	07/09/18 17:51	
EPA 6010D	Vanadium, Dissolved	2.8J	ug/L	15.0	07/09/18 17:51	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437867010	**062718-LashawAg**					
EPA 6010D	Zinc, Dissolved	382	ug/L	20.0	07/09/18 17:51	
SM 2320B	Alkalinity, Total as CaCO3	170	mg/L	5.0	07/11/18 11:08	
SM 2540C	Total Dissolved Solids	215	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	2.7	mg/L	1.2	06/30/18 22:26	
EPA 300.0	Nitrate as N	0.084J	mg/L	0.10	06/30/18 22:26	H3
EPA 300.0	Sulfate	5.1	mg/L	1.2	06/30/18 22:26	
EPA 353.2	Nitrogen, NO2 plus NO3	0.077J	mg/L	0.10	07/11/18 12:06	
SM 5310C	Total Organic Carbon	0.60J	mg/L	1.0	07/10/18 14:18	
10437867011	**Trip Blank**					
EPA 8260B	Carbon disulfide	0.10J	ug/L	1.0	07/07/18 12:10	B
EPA 8260B	Methylene Chloride	1.0J	ug/L	4.0	07/07/18 12:10	B

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548998

B: Analyte was detected in the associated method blank.

- BLANK for HBN 548998 [MSV/4456 (Lab ID: 2984419)
  - Carbon disulfide
  - Methylene Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10437867011)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 114031

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 491418)
  - Sulfide, Total
- MS (Lab ID: 491420)
  - Sulfide, Total

QC Batch: 114033

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 491444)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- 062718-Asher (Lab ID: 10437867001)
- 062718-FD2 (Lab ID: 10437867009)
- 062718-Lang (Lab ID: 10437867005)
- 062718-Lashaw (Lab ID: 10437867006)
- 062718-LashawAg (Lab ID: 10437867010)
- 062718-Randall (Lab ID: 10437867004)
- 062718-Silva (Lab ID: 10437867007)
- 062718-Stark (Lab ID: 10437867008)
- 062718-Thorson (Lab ID: 10437867002)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547969

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2979323)
  - Chloride
  - Nitrate as N
- MSD (Lab ID: 2979324)
  - Chloride
  - Nitrate as N

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2979327)
  - Nitrate as N
- MS (Lab ID: 2979329)
  - Nitrate as N
- MSD (Lab ID: 2979328)
  - Nitrate as N

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2979330)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549717

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 549717

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2987489)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
10 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Asher **Lab ID: 10437867001** Collected: 06/27/18 13:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 11:21	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 11:21	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 11:21	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**17.2J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:10	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:10	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:10	7440-38-2	
Barium, Dissolved	**78.1**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:10	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:10	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:10	7440-43-9	
Calcium, Dissolved	**65200**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:10	7440-70-2	
Chromium, Dissolved	**0.85J**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:10	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:10	7440-48-4	
Copper, Dissolved	**18.9**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:10	7440-50-8	
Iron, Dissolved	**5.3J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:10	7439-89-6	
Lead, Dissolved	**3.0J**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:10	7439-92-1	
Magnesium, Dissolved	**19300**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:10	7439-95-4	
Manganese, Dissolved	**0.34J**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:10	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:10	7440-02-0	
Potassium, Dissolved	**1190J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:10	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:10	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:10	7440-22-4	
Sodium, Dissolved	**21000**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:10	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:10	7440-28-0	
Vanadium, Dissolved	**10.6J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:10	7440-62-2	
Zinc, Dissolved	**13.1J**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:10	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 17:54	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**228**	mg/L	5.0	1.0	1		07/11/18 09:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**334**	mg/L	20.0	10.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:55	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**8.3**	mg/L	1.2	0.28	1		06/30/18 18:20	16887-00-6	
Nitrate as N	**7.5**	mg/L	0.10	0.015	1		06/30/18 18:20	14797-55-8	H3
Sulfate	**31.4**	mg/L	1.2	0.19	1		06/30/18 18:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Asher **Lab ID: 10437867001** Collected: 06/27/18 13:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**8.2**	mg/L	1.0	0.11	10		07/11/18 13:04		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:47		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.0**	mg/L	1.0	0.20	1		07/10/18 10:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Thorson **Lab ID: 10437867002** Collected: 06/27/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 09:55	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 09:55	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 09:55	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:12	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:12	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:12	7440-38-2	
Barium, Dissolved	**51.0**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:12	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:12	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:12	7440-43-9	
Calcium, Dissolved	**23200**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:12	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:12	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:12	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:12	7440-50-8	
Iron, Dissolved	**1120**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:12	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:12	7439-92-1	
Magnesium, Dissolved	**11700**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:12	7439-95-4	
Manganese, Dissolved	**26.2**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:12	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:12	7440-02-0	
Potassium, Dissolved	**3580**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:12	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:12	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:12	7440-22-4	
Sodium, Dissolved	**13500**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:12	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:12	7440-28-0	
Vanadium, Dissolved	**0.33J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:12	7440-62-2	
Zinc, Dissolved	**18.3J**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:12	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 17:56	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**144**	mg/L	5.0	1.0	1		07/11/18 10:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**187**	mg/L	10.0	5.0	1		07/02/18 16:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:20	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2**	mg/L	1.2	0.28	1		06/30/18 18:35	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		06/30/18 18:35	14797-55-8	H3
Sulfate	**3.2**	mg/L	1.2	0.19	1		06/30/18 18:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Thorson **Lab ID: 10437867002** Collected: 06/27/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.011**	mg/L	0.10	0.011	1		07/11/18 11:52		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:43		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.4**	mg/L	1.0	0.20	1		07/10/18 10:42	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Marlow **Lab ID: 10437867003** Collected: 06/27/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 11:28	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 11:28	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 11:28	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**20.2J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:20	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:20	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:20	7440-38-2	
Barium, Dissolved	**28.1**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:20	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:20	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:20	7440-43-9	
Calcium, Dissolved	**46100**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:20	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:20	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:20	7440-48-4	
Copper, Dissolved	**4.3J**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:20	7440-50-8	
Iron, Dissolved	**6.2J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:20	7439-89-6	
Lead, Dissolved	**2.2J**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:20	7439-92-1	
Magnesium, Dissolved	**13300**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:20	7439-95-4	
Manganese, Dissolved	**0.25J**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:20	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:20	7440-02-0	
Potassium, Dissolved	**1180J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:20	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:20	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:20	7440-22-4	
Sodium, Dissolved	**11600**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:20	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:20	7440-28-0	
Vanadium, Dissolved	**8.5J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:20	7440-62-2	
Zinc, Dissolved	**27.0**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:20	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:03	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**157**	mg/L	5.0	1.0	1		07/11/18 10:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**267**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:24	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**15.7**	mg/L	1.2	0.28	1		06/30/18 19:38	16887-00-6	M1
Nitrate as N	**3.8**	mg/L	0.10	0.015	1		06/30/18 19:38	14797-55-8	M1
Sulfate	**13.1**	mg/L	1.2	0.19	1		06/30/18 19:38	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Marlow **Lab ID: 10437867003** Collected: 06/27/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.0**	mg/L	0.50	0.054	5		07/11/18 13:06		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:45		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.20	1		07/10/18 11:32	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Randall **Lab ID: 10437867004** Collected: 06/27/18 15:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 12:53	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 12:53	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 12:53	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:32	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:32	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:32	7440-38-2	
Barium, Dissolved	**22.9**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:32	7440-39-3	
Beryllium, Dissolved	**0.16J**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:32	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:32	7440-43-9	
Calcium, Dissolved	**46200**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:32	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:32	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:32	7440-48-4	
Copper, Dissolved	**28.3**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:32	7440-50-8	
Iron, Dissolved	**5.6J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:32	7439-89-6	
Lead, Dissolved	**2.2J**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:32	7439-92-1	
Magnesium, Dissolved	**14500**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:32	7439-95-4	
Manganese, Dissolved	**3.1J**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:32	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:32	7440-02-0	
Potassium, Dissolved	**1230J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:32	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:32	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:32	7440-22-4	
Sodium, Dissolved	**13700**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:32	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:32	7440-28-0	
Vanadium, Dissolved	**5.6J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:32	7440-62-2	
Zinc, Dissolved	**390**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:32	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:16	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**194**	mg/L	5.0	1.0	1		07/11/18 12:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**245**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:55	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**6.9**	mg/L	1.2	0.28	1		07/01/18 02:37	16887-00-6	
Nitrate as N	**1.8**	mg/L	0.10	0.015	1		07/01/18 02:37	14797-55-8	H3,M1
Sulfate	**7.9**	mg/L	1.2	0.19	1		07/01/18 02:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Randall **Lab ID: 10437867004** Collected: 06/27/18 15:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.9**	mg/L	0.10	0.011	1		07/11/18 12:28		M1
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:21		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.93J**	mg/L	1.0	0.20	1		07/10/18 05:55	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Lang **Lab ID: 10437867005** Collected: 06/27/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 11:50	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 11:50	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 11:50	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**19.0J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:40	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:40	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:40	7440-38-2	
Barium, Dissolved	**16.6**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:40	7440-39-3	
Beryllium, Dissolved	**0.23J**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:40	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:40	7440-43-9	
Calcium, Dissolved	**43500**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:40	7440-70-2	
Chromium, Dissolved	**0.59J**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:40	7440-47-3	
Cobalt, Dissolved	**0.58J**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:40	7440-48-4	
Copper, Dissolved	**16.9**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:40	7440-50-8	
Iron, Dissolved	**132**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:40	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:40	7439-92-1	
Magnesium, Dissolved	**12400**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:40	7439-95-4	
Manganese, Dissolved	**10.2**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:40	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:40	7440-02-0	
Potassium, Dissolved	**1020J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:40	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:40	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:40	7440-22-4	
Sodium, Dissolved	**16200**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:40	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:40	7440-28-0	
Vanadium, Dissolved	**5.4J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:40	7440-62-2	
Zinc, Dissolved	**53.0**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:40	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:24	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**196**	mg/L	5.0	1.0	1		07/11/18 10:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**231**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:25	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.8**	mg/L	1.2	0.28	1		06/30/18 20:41	16887-00-6	
Nitrate as N	**0.46**	mg/L	0.10	0.015	1		06/30/18 20:41	14797-55-8	H3
Sulfate	**3.6**	mg/L	1.2	0.19	1		06/30/18 20:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Lang **Lab ID: 10437867005** Collected: 06/27/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.48**	mg/L	0.10	0.011	1		07/11/18 12:01		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.84J**	mg/L	1.0	0.20	1		07/10/18 12:56	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Lashaw **Lab ID: 10437867006** Collected: 06/27/18 16:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 11:57	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 11:57	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 11:57	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:41	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:41	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:41	7440-38-2	
Barium, Dissolved	**9.1J**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:41	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:41	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:41	7440-43-9	
Calcium, Dissolved	**25700**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:41	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:41	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:41	7440-48-4	
Copper, Dissolved	**2.3J**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:41	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:41	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:41	7439-92-1	
Magnesium, Dissolved	**11400**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:41	7439-95-4	
Manganese, Dissolved	**0.27J**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:41	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:41	7440-02-0	
Potassium, Dissolved	**3670**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:41	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:41	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:41	7440-22-4	
Sodium, Dissolved	**14400**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:41	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:41	7440-28-0	
Vanadium, Dissolved	**13.2J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:41	7440-62-2	
Zinc, Dissolved	**52.1**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:41	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:26	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**152**	mg/L	5.0	1.0	1		07/11/18 10:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**199**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:26	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.28	1		06/30/18 21:26	16887-00-6	
Nitrate as N	**1.3**	mg/L	0.10	0.015	1		06/30/18 21:26	14797-55-8	H3
Sulfate	**4.8**	mg/L	1.2	0.19	1		06/30/18 21:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Lashaw **Lab ID: 10437867006** Collected: 06/27/18 16:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.3**	mg/L	0.10	0.011	1		07/11/18 12:02		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.57J**	mg/L	1.0	0.20	1		07/10/18 13:12	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Silva **Lab ID: 10437867007** Collected: 06/27/18 17:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 12:04	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 12:04	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 12:04	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:46	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:46	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:46	7440-38-2	
Barium, Dissolved	**28.5**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:46	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:46	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:46	7440-43-9	
Calcium, Dissolved	**37200**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:46	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:46	7440-47-3	
Cobalt, Dissolved	**0.85J**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:46	7440-48-4	
Copper, Dissolved	**26.7**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:46	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:46	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:46	7439-92-1	
Magnesium, Dissolved	**12200**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:46	7439-95-4	
Manganese, Dissolved	**0.57J**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:46	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:46	7440-02-0	
Potassium, Dissolved	**1340J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:46	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:46	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:46	7440-22-4	
Sodium, Dissolved	**13300**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:46	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:46	7440-28-0	
Vanadium, Dissolved	**9.0J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:46	7440-62-2	
Zinc, Dissolved	**270**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:46	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:29	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**166**	mg/L	5.0	1.0	1		07/11/18 10:55		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**231**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.2	0.28	1		06/30/18 21:41	16887-00-6	
Nitrate as N	**2.2**	mg/L	0.10	0.015	1		06/30/18 21:41	14797-55-8	H3
Sulfate	**10.0**	mg/L	1.2	0.19	1		06/30/18 21:41	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Silva **Lab ID: 10437867007** Collected: 06/27/18 17:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.1**	mg/L	0.50	0.054	5		07/11/18 13:09		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.6**	mg/L	1.0	0.20	1		07/10/18 13:29	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Stark **Lab ID: 10437867008** Collected: 06/27/18 17:35 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 12:11	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 12:11	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 12:11	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:48	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:48	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:48	7440-38-2	
Barium, Dissolved	**28.9**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:48	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:48	7440-41-7	
Cadmium, Dissolved	**0.29J**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:48	7440-43-9	
Calcium, Dissolved	**27300**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:48	7440-70-2	
Chromium, Dissolved	**0.56J**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:48	7440-47-3	
Cobalt, Dissolved	**1.8J**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:48	7440-48-4	
Copper, Dissolved	**177**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:48	7440-50-8	
Iron, Dissolved	**6.0J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:48	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:48	7439-92-1	
Magnesium, Dissolved	**11300**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:48	7439-95-4	
Manganese, Dissolved	**20.5**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:48	7439-96-5	
Nickel, Dissolved	**8.8J**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:48	7440-02-0	
Potassium, Dissolved	**2960**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:48	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:48	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:48	7440-22-4	
Sodium, Dissolved	**14300**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:48	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:48	7440-28-0	
Vanadium, Dissolved	**3.7J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:48	7440-62-2	
Zinc, Dissolved	**20.6**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:48	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:31	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**143**	mg/L	5.0	1.0	1		07/11/18 10:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**201**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.28	1		06/30/18 21:56	16887-00-6	
Nitrate as N	**1.5**	mg/L	0.10	0.015	1		06/30/18 21:56	14797-55-8	H3
Sulfate	**17.7**	mg/L	1.2	0.19	1		06/30/18 21:56	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-Stark **Lab ID: 10437867008** Collected: 06/27/18 17:35 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.7**	mg/L	0.10	0.011	1		07/11/18 12:04		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.65J**	mg/L	1.0	0.20	1		07/10/18 13:45	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-FD2 **Lab ID: 10437867009** Collected: 06/27/18 16:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 12:19	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 12:19	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 12:19	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:50	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:50	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:50	7440-38-2	
Barium, Dissolved	**16.4**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:50	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:50	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:50	7440-43-9	
Calcium, Dissolved	**43200**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:50	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:50	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:50	7440-48-4	
Copper, Dissolved	**14.7**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:50	7440-50-8	
Iron, Dissolved	**113**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:50	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:50	7439-92-1	
Magnesium, Dissolved	**12300**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:50	7439-95-4	
Manganese, Dissolved	**9.9**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:50	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:50	7440-02-0	
Potassium, Dissolved	**998J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:50	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:50	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:50	7440-22-4	
Sodium, Dissolved	**16300**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:50	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:50	7440-28-0	
Vanadium, Dissolved	**5.0J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:50	7440-62-2	
Zinc, Dissolved	**53.9**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:50	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:38	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**194**	mg/L	5.0	1.0	1		07/11/18 11:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**223**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:32	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.28	1		06/30/18 22:11	16887-00-6	
Nitrate as N	**0.45**	mg/L	0.10	0.015	1		06/30/18 22:11	14797-55-8	H3
Sulfate	**2.2**	mg/L	1.2	0.19	1		06/30/18 22:11	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-FD2 **Lab ID: 10437867009** Collected: 06/27/18 16:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.52**	mg/L	0.10	0.011	1		07/11/18 12:05		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:48		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.48J**	mg/L	1.0	0.20	1		07/10/18 14:01	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-LashawAg **Lab ID: 10437867010** Collected: 06/27/18 16:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 12:26	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 12:26	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 12:26	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**17.3J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:51	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:51	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:51	7440-38-2	
Barium, Dissolved	**34.0**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:51	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:51	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:51	7440-43-9	
Calcium, Dissolved	**31800**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:51	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:51	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:51	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:51	7440-50-8	
Iron, Dissolved	**36.1J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:51	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:51	7439-92-1	
Magnesium, Dissolved	**12900**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:51	7439-95-4	
Manganese, Dissolved	**33.3**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:51	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:51	7440-02-0	
Potassium, Dissolved	**4190**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:51	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:51	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:51	7440-22-4	
Sodium, Dissolved	**16300**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:51	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:51	7440-28-0	
Vanadium, Dissolved	**2.8J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:51	7440-62-2	
Zinc, Dissolved	**382**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:51	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:40	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**170**	mg/L	5.0	1.0	1		07/11/18 11:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**215**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 17:58	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.7**	mg/L	1.2	0.28	1		06/30/18 22:26	16887-00-6	
Nitrate as N	**0.084J**	mg/L	0.10	0.015	1		06/30/18 22:26	14797-55-8	H3
Sulfate	**5.1**	mg/L	1.2	0.19	1		06/30/18 22:26	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: 062718-LashawAg **Lab ID: 10437867010** Collected: 06/27/18 16:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.077J**	mg/L	0.10	0.011	1		07/11/18 12:06		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:49		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.60J**	mg/L	1.0	0.20	1		07/10/18 14:18	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: Trip Blank **Lab ID: 10437867011** Collected: 06/27/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:10	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:10	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:10	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:10	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 12:10	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:10	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:10	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:10	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 12:10	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 12:10	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:10	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:10	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 12:10	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 12:10	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:10	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 12:10	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 12:10	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 12:10	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:10	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:10	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 12:10	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:10	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 12:10	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 12:10	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 12:10	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 12:10	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:10	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 12:10	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 12:10	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 12:10	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 12:10	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 12:10	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 12:10	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 12:10	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 12:10	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 12:10	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 12:10	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 12:10	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 12:10	74-83-9	
Carbon disulfide	**0.10J**	ug/L	1.0	0.078	1		07/07/18 12:10	75-15-0	B
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 12:10	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:10	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 12:10	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 12:10	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 12:10	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:10	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Sample: Trip Blank | **Lab ID: 10437867011** | Collected: 06/27/18 00:00 | Received: 06/30/18 09:30 | Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 12:10	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 12:10	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 12:10	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 12:10	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:10	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 12:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:10	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:10	1634-04-4	
Methylene Chloride	**1.0J**	ug/L	4.0	0.98	1		07/07/18 12:10	75-09-2	B
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 12:10	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 12:10	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:10	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 12:10	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 12:10	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 12:10	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 12:10	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 12:10	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 12:10	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 12:10	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:10	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:10	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 12:10	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 12:10	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 12:10	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:10	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:10	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:10	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 12:10	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 12:10	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:10	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:10	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:10	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 12:10	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 12:10	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/07/18 12:10	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		07/07/18 12:10	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548327 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2980878 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/03/18 09:48	
Ethene	ug/L	<2.9	10.0	2.9	07/03/18 09:48	
Methane	ug/L	<4.9	10.0	4.9	07/03/18 09:48	

LABORATORY CONTROL SAMPLE & LCSD: 2980879 2980880

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	109	96	96	85-115	0	20	
Ethene	ug/L	106	102	101	96	96	85-115	0	20	
Methane	ug/L	60.7	60.2	59.4	99	98	85-115	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980881 2980882

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	151	165	133	145	30-150	9	20	
Ethene	ug/L	<2.9	106	106	138	150	130	141	30-150	8	20	
Methane	ug/L	<4.9	60.7	60.7	85.1	91.3	136	146	30-150	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980883 2980884

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	119	114	104	100	30-150	4	20	
Ethene	ug/L	<2.9	106	106	110	106	104	100	30-150	4	20	
Methane	ug/L	<4.9	60.7	60.7	66.0	63.9	106	103	30-150	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548415 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437867004

METHOD BLANK: 2981181 | Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/03/18 12:46	
Ethene	ug/L	<2.9	10.0	2.9	07/03/18 12:46	
Methane	ug/L	<4.9	10.0	4.9	07/03/18 12:46	

LABORATORY CONTROL SAMPLE & LCSD: 2981182 2981183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	107	96	94	85-115	2	20	
Ethene	ug/L	106	101	100	96	94	85-115	1	20	
Methane	ug/L	60.7	59.4	59.5	98	98	85-115	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2981184 2981185

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	104	147	91	130	30-150	35	20	R1
Ethene	ug/L	<2.9	106	106	96.9	135	91	127	30-150	33	20	R1
Methane	ug/L	<4.9	60.7	60.7	58.7	81.6	94	132	30-150	33	20	R1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548031 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2979620 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/09/18 17:49	

LABORATORY CONTROL SAMPLE: 2979621

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979622 2979623

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.0	4.8	99	96	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979624 2979625

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.1	5.1	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979626 2979627

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.1	5.1	102	101	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548020 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2979574 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/09/18 17:07	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/09/18 17:07	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/09/18 17:07	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/09/18 17:07	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/09/18 17:07	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/09/18 17:07	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/09/18 17:07	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/09/18 17:07	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/09/18 17:07	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/09/18 17:07	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	07/09/18 17:07	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/09/18 17:07	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/09/18 17:07	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/09/18 17:07	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/09/18 17:07	
Potassium, Dissolved	ug/L	<310	2500	310	07/09/18 17:07	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/09/18 17:07	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/09/18 17:07	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	07/09/18 17:07	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/09/18 17:07	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	07/09/18 17:07	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/09/18 17:07	

LABORATORY CONTROL SAMPLE: 2979575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19800	99	80-120	
Antimony, Dissolved	ug/L	1000	939	94	80-120	
Arsenic, Dissolved	ug/L	1000	948	95	80-120	
Barium, Dissolved	ug/L	1000	951	95	80-120	
Beryllium, Dissolved	ug/L	1000	963	96	80-120	
Cadmium, Dissolved	ug/L	1000	953	95	80-120	
Calcium, Dissolved	ug/L	20000	18600	93	80-120	
Chromium, Dissolved	ug/L	1000	942	94	80-120	
Cobalt, Dissolved	ug/L	1000	949	95	80-120	
Copper, Dissolved	ug/L	1000	906	91	80-120	
Iron, Dissolved	ug/L	20000	18900	94	80-120	
Lead, Dissolved	ug/L	1000	963	96	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

LABORATORY CONTROL SAMPLE: 2979575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	955	95	80-120	
Nickel, Dissolved	ug/L	1000	950	95	80-120	
Potassium, Dissolved	ug/L	20000	18400	92	80-120	
Selenium, Dissolved	ug/L	1000	1000	100	80-120	
Silver, Dissolved	ug/L	500	474	95	80-120	
Sodium, Dissolved	ug/L	20000	18300	92	80-120	
Thallium, Dissolved	ug/L	1000	945	94	80-120	
Vanadium, Dissolved	ug/L	1000	937	94	80-120	
Zinc, Dissolved	ug/L	1000	966	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979576 2979577

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21400	20900	107	104	75-125	2	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	984	102	98	75-125	4	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1000	102	100	75-125	1	20	
Barium, Dissolved	ug/L	51.0	1000	1000	1060	1060	101	100	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1040	1020	104	102	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1020	1000	102	100	75-125	1	20	
Calcium, Dissolved	ug/L	23200	20000	20000	44400	44100	106	104	75-125	1	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	1010	994	101	99	75-125	2	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	1000	986	100	99	75-125	2	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	968	971	97	97	75-125	0	20	
Iron, Dissolved	ug/L	1120	20000	20000	21400	21000	101	100	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1020	1010	102	101	75-125	1	20	
Magnesium, Dissolved	ug/L	11700	20000	20000	32700	32400	105	104	75-125	1	20	
Manganese, Dissolved	ug/L	26.2	1000	1000	1040	1040	102	102	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	1000	990	100	99	75-125	1	20	
Potassium, Dissolved	ug/L	3580	20000	20000	24200	24000	103	102	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1060	1040	106	104	75-125	1	20	
Silver, Dissolved	ug/L	<0.38	500	500	508	504	102	101	75-125	1	20	
Sodium, Dissolved	ug/L	13500	20000	20000	32900	33400	97	100	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1000	990	100	99	75-125	1	20	
Vanadium, Dissolved	ug/L	0.33J	1000	1000	1000	990	100	99	75-125	1	20	
Zinc, Dissolved	ug/L	18.3J	1000	1000	1040	1030	102	101	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979578 2979579

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	20.2J	20000	20000	20700	20000	103	100	75-125	3	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1000	966	100	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979578 2979579

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1010	966	101	97	75-125	4	20	
Barium, Dissolved	ug/L	28.1	1000	1000	1030	998	100	97	75-125	3	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1020	983	102	98	75-125	4	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	963	100	96	75-125	4	20	
Calcium, Dissolved	ug/L	46100	20000	20000	66100	63900	100	89	75-125	3	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	992	952	99	95	75-125	4	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	981	941	98	94	75-125	4	20	
Copper, Dissolved	ug/L	4.3J	1000	1000	970	922	97	92	75-125	5	20	
Iron, Dissolved	ug/L	6.2J	20000	20000	19900	19100	99	95	75-125	4	20	
Lead, Dissolved	ug/L	2.2J	1000	1000	1000	961	100	96	75-125	4	20	
Magnesium, Dissolved	ug/L	13300	20000	20000	33600	32600	101	96	75-125	3	20	
Manganese, Dissolved	ug/L	0.25J	1000	1000	1010	960	101	96	75-125	5	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	981	941	98	94	75-125	4	20	
Potassium, Dissolved	ug/L	1180J	20000	20000	21600	21000	102	99	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1050	1010	105	101	75-125	4	20	
Silver, Dissolved	ug/L	<0.38	500	500	504	482	101	96	75-125	4	20	
Sodium, Dissolved	ug/L	11600	20000	20000	31500	29800	100	91	75-125	5	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	981	949	98	95	75-125	3	20	
Vanadium, Dissolved	ug/L	8.5J	1000	1000	998	958	99	95	75-125	4	20	
Zinc, Dissolved	ug/L	27.0	1000	1000	1030	987	100	96	75-125	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979580 2979581

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	19700	20800	98	104	75-125	6	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	940	1020	94	102	75-125	8	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	952	1010	95	101	75-125	6	20	
Barium, Dissolved	ug/L	22.9	1000	1000	963	1040	94	101	75-125	7	20	
Beryllium, Dissolved	ug/L	0.16J	1000	1000	973	1030	97	103	75-125	6	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	946	1000	95	100	75-125	6	20	
Calcium, Dissolved	ug/L	46200	20000	20000	62100	65600	79	97	75-125	6	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	941	997	94	100	75-125	6	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	925	980	92	98	75-125	6	20	
Copper, Dissolved	ug/L	28.3	1000	1000	936	993	91	96	75-125	6	20	
Iron, Dissolved	ug/L	5.6J	20000	20000	18800	19700	94	98	75-125	5	20	
Lead, Dissolved	ug/L	2.2J	1000	1000	947	1000	94	100	75-125	6	20	
Magnesium, Dissolved	ug/L	14500	20000	20000	32900	34900	92	102	75-125	6	20	
Manganese, Dissolved	ug/L	3.1J	1000	1000	957	1010	95	101	75-125	6	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	931	984	93	98	75-125	6	20	
Potassium, Dissolved	ug/L	1230J	20000	20000	20500	21700	96	103	75-125	6	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	987	1050	99	105	75-125	6	20	
Silver, Dissolved	ug/L	<0.38	500	500	477	505	95	101	75-125	6	20	
Sodium, Dissolved	ug/L	13700	20000	20000	30900	32900	86	96	75-125	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979580 2979581

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium, Dissolved	ug/L	<4.3	1000	1000	930	995	93	99	75-125	7	20	
Vanadium, Dissolved	ug/L	5.6J	1000	1000	938	998	93	99	75-125	6	20	
Zinc, Dissolved	ug/L	390	1000	1000	1310	1390	92	100	75-125	6	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548998 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437867011

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437867011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437867011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549643 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2987265 | Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/11/18 08:31	

LABORATORY CONTROL SAMPLE & LCSD: 2987266 2987267

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.5	41.9	104	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987268 2987269

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	144	40	40	192	187	120	107	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987270 2987271

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	157	40	40	201	202	110	113	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549644 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437867004

METHOD BLANK: 2987272 — Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1.2J	5.0	1.0	07/11/18 11:50	

LABORATORY CONTROL SAMPLE & LCSD: 2987273 — 2987274

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	41.9	106	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987275 — 2987276

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	194	40	40	237	241	109	119	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987277 — 2987278

Parameter	Units	10437875004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	182	40	40	222	222	99	98	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548068
Analysis Method: SM 2540C
QC Batch Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437867002

METHOD BLANK: 2979722
Matrix: Water
Associated Lab Samples: 10437867002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/02/18 16:20	

LABORATORY CONTROL SAMPLE & LCSD: 2979723 2979724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	948	972	95	97	80-120	2	10	

SAMPLE DUPLICATE: 2979725

Parameter	Units	10437867002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	187	181	3	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548339 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437867003

METHOD BLANK: 2980909 | Matrix: Water
Associated Lab Samples: 10437867003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/03/18 14:32	

LABORATORY CONTROL SAMPLE & LCSD: 2980910 | 2980911

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	976	982	98	98	80-120	1	10	

SAMPLE DUPLICATE: 2980912

Parameter	Units	10437867003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	266	0	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 548341 — Analysis Method: SM 2540C
QC Batch Method: SM 2540C — Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437867001, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2980917 — Matrix: Water
Associated Lab Samples: 10437867001, 10437867004, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/03/18 15:26	

LABORATORY CONTROL SAMPLE & LCSD: 2980918 2980919

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	500	480	476	96	95	80-120	1	10	

SAMPLE DUPLICATE: 2980920

Parameter	Units	10437867004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	245	251	2	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 114031 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009

METHOD BLANK: 491415 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/03/18 16:33	

LABORATORY CONTROL SAMPLE: 491416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 491418

Parameter	Units	10437867002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.12	58	75-125	M1

MATRIX SPIKE SAMPLE: 491420

Parameter	Units	10437867003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.11	54	75-125	M1

SAMPLE DUPLICATE: 491417

Parameter	Units	10437867002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 491419

Parameter	Units	10437867003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 114033 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437867004, 10437867010

METHOD BLANK: 491441 | Matrix: Water
Associated Lab Samples: 10437867004, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/03/18 17:38	

LABORATORY CONTROL SAMPLE: 491442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	94	90-110	

MATRIX SPIKE SAMPLE: 491444

Parameter	Units	10437867004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.11	56	75-125	M1

SAMPLE DUPLICATE: 491443

Parameter	Units	10437867004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 547969 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2979318 | Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	06/30/18 17:41	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	06/30/18 17:41	FS
Sulfate	mg/L	<0.19	1.2	0.19	06/30/18 17:41	FS

LABORATORY CONTROL SAMPLE: 2979319

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.1	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979321 2979322

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	13.2	13.2	96	96	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.94	0.94	94	94	90-110	0	20	
Sulfate	mg/L	3.2	12.5	12.5	15.8	15.8	100	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979323 2979324

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.7	12.5	12.5	26.1	26.1	84	84	90-110	0	20	M1
Nitrate as N	mg/L	3.8	1	1	4.4	4.4	58	59	90-110	0	20	M1
Sulfate	mg/L	13.1	12.5	12.5	24.6	24.6	92	93	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 547970 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437867004

METHOD BLANK: 2979325 | Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	07/01/18 01:58	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	07/01/18 01:58	FS
Sulfate	mg/L	<0.19	1.2	0.19	07/01/18 01:58	FS

LABORATORY CONTROL SAMPLE: 2979326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.5	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979327 2979328

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.9	12.5	12.5	18.3	18.4	92	92	90-110	0	20	
Nitrate as N	mg/L	1.8	1	1	2.7	2.7	82	84	90-110	1	20	M1
Sulfate	mg/L	7.9	12.5	12.5	20.0	20.1	97	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979329 2979330

Parameter	Units	10437878008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	12.5	12.5	14.9	14.8	95	95	90-110	1	20	FS
Nitrate as N	mg/L	1.9	1	1	2.8	2.8	84	83	90-110	0	20	FS,M1
Sulfate	mg/L	6.3	12.5	12.5	18.8	18.7	100	99	90-110	1	20	FS

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549714 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437867001

METHOD BLANK: 2987465 | Matrix: Water
Associated Lab Samples: 10437867001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 11:49	

LABORATORY CONTROL SAMPLE: 2987466

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.93	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987467 2987468

Parameter	Units	10437790006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.10	1	1	1.1	1.1	99	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987469 2987470

Parameter	Units	10437790007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.020	1	1	0.98	0.99	97	98	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549715 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2987471 Matrix: Water
Associated Lab Samples: 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:25	

LABORATORY CONTROL SAMPLE: 2987472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.91	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987473 2987474

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.011	1	1	0.98	0.96	98	95	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987475 2987476

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.0	5	5	8.8	8.5	96	91	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549717 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437867004

METHOD BLANK: 2987486 | Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:59	

LABORATORY CONTROL SAMPLE: 2987487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987488 | 2987489

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.9	87	101	90-110	5	20	E,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987490 | 2987491

Parameter	Units	10437878009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	9.4	9.2	103	99	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549425 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 2986224 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/10/18 15:43	

LABORATORY CONTROL SAMPLE: 2986225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	308	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986226 2986227

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	261	275	100	106	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986228 2986229

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	262	265	104	105	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 549997 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10437867004

METHOD BLANK: 2988765 | Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/12/18 16:20	

LABORATORY CONTROL SAMPLE: 2988766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	305	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988767 2988768

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	274	267	107	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988769 2988770

Parameter	Units	10437878005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	266	273	106	109	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 146772 — Analysis Method: SM 5310C
QC Batch Method: SM 5310C — Analysis Description: 5310C TOC
Associated Lab Samples: 10437867004

METHOD BLANK: 580011 — Matrix: Water
Associated Lab Samples: 10437867004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/10/18 00:58	

LABORATORY CONTROL SAMPLE: 580012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580015 580016

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.93J	25	25	25.6	26.0	99	100	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580018 580019

Parameter	Units	10438034001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.4	25.7	100	101	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

QC Batch: 146775 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

METHOD BLANK: 580040 Matrix: Water
Associated Lab Samples: 10437867001, 10437867002, 10437867003, 10437867005, 10437867006, 10437867007, 10437867008, 10437867009, 10437867010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/10/18 09:18	

LABORATORY CONTROL SAMPLE: 580041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580042 580043

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.4	25	25	25.5	25.3	96	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580044 580045

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.2	25	25	26.5	26.8	97	98	80-120	1	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

BATCH QUALIFIERS

Batch: 548998

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437867001	**062718-Asher**	RSK 175	548327		
10437867002	**062718-Thorson**	RSK 175	548327		
10437867003	**062718-Marlow**	RSK 175	548327		
10437867004	**062718-Randall**	RSK 175	548415		
10437867005	**062718-Lang**	RSK 175	548327		
10437867006	**062718-Lashaw**	RSK 175	548327		
10437867007	**062718-Silva**	RSK 175	548327		
10437867008	**062718-Stark**	RSK 175	548327		
10437867009	**062718-FD2**	RSK 175	548327		
10437867010	**062718-LashawAg**	RSK 175	548327		
10437867001	**062718-Asher**	EPA 3010	548020	EPA 6010D	549245
10437867002	**062718-Thorson**	EPA 3010	548020	EPA 6010D	549245
10437867003	**062718-Marlow**	EPA 3010	548020	EPA 6010D	549245
10437867004	**062718-Randall**	EPA 3010	548020	EPA 6010D	549245
10437867005	**062718-Lang**	EPA 3010	548020	EPA 6010D	549245
10437867006	**062718-Lashaw**	EPA 3010	548020	EPA 6010D	549245
10437867007	**062718-Silva**	EPA 3010	548020	EPA 6010D	549245
10437867008	**062718-Stark**	EPA 3010	548020	EPA 6010D	549245
10437867009	**062718-FD2**	EPA 3010	548020	EPA 6010D	549245
10437867010	**062718-LashawAg**	EPA 3010	548020	EPA 6010D	549245
10437867001	**062718-Asher**	EPA 7470A	548031	EPA 7470A	549264
10437867002	**062718-Thorson**	EPA 7470A	548031	EPA 7470A	549264
10437867003	**062718-Marlow**	EPA 7470A	548031	EPA 7470A	549264
10437867004	**062718-Randall**	EPA 7470A	548031	EPA 7470A	549264
10437867005	**062718-Lang**	EPA 7470A	548031	EPA 7470A	549264
10437867006	**062718-Lashaw**	EPA 7470A	548031	EPA 7470A	549264
10437867007	**062718-Silva**	EPA 7470A	548031	EPA 7470A	549264
10437867008	**062718-Stark**	EPA 7470A	548031	EPA 7470A	549264
10437867009	**062718-FD2**	EPA 7470A	548031	EPA 7470A	549264
10437867010	**062718-LashawAg**	EPA 7470A	548031	EPA 7470A	549264
10437867011	**Trip Blank**	EPA 8260B	548998		
10437867001	**062718-Asher**	SM 2320B	549643		
10437867002	**062718-Thorson**	SM 2320B	549643		
10437867003	**062718-Marlow**	SM 2320B	549643		
10437867004	**062718-Randall**	SM 2320B	549644		
10437867005	**062718-Lang**	SM 2320B	549643		
10437867006	**062718-Lashaw**	SM 2320B	549643		
10437867007	**062718-Silva**	SM 2320B	549643		
10437867008	**062718-Stark**	SM 2320B	549643		
10437867009	**062718-FD2**	SM 2320B	549643		
10437867010	**062718-LashawAg**	SM 2320B	549643		
10437867001	**062718-Asher**	SM 2540C	548341		
10437867002	**062718-Thorson**	SM 2540C	548068		

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437867003	062718-Marlow	SM 2540C	548339		
10437867004	062718-Randall	SM 2540C	548341		
10437867005	062718-Lang	SM 2540C	548341		
10437867006	062718-Lashaw	SM 2540C	548341		
10437867007	062718-Silva	SM 2540C	548341		
10437867008	062718-Stark	SM 2540C	548341		
10437867009	062718-FD2	SM 2540C	548341		
10437867010	062718-LashawAg	SM 2540C	548341		
10437867001	062718-Asher	SM 4500-S-2 D	114031		
10437867002	062718-Thorson	SM 4500-S-2 D	114031		
10437867003	062718-Marlow	SM 4500-S-2 D	114031		
10437867004	062718-Randall	SM 4500-S-2 D	114033		
10437867005	062718-Lang	SM 4500-S-2 D	114031		
10437867006	062718-Lashaw	SM 4500-S-2 D	114031		
10437867007	062718-Silva	SM 4500-S-2 D	114031		
10437867008	062718-Stark	SM 4500-S-2 D	114031		
10437867009	062718-FD2	SM 4500-S-2 D	114031		
10437867010	062718-LashawAg	SM 4500-S-2 D	114033		
10437867001	062718-Asher	EPA 300.0	547969		
10437867002	062718-Thorson	EPA 300.0	547969		
10437867003	062718-Marlow	EPA 300.0	547969		
10437867004	062718-Randall	EPA 300.0	547970		
10437867005	062718-Lang	EPA 300.0	547969		
10437867006	062718-Lashaw	EPA 300.0	547969		
10437867007	062718-Silva	EPA 300.0	547969		
10437867008	062718-Stark	EPA 300.0	547969		
10437867009	062718-FD2	EPA 300.0	547969		
10437867010	062718-LashawAg	EPA 300.0	547969		
10437867001	062718-Asher	EPA 353.2	549714		
10437867002	062718-Thorson	EPA 353.2	549715		
10437867003	062718-Marlow	EPA 353.2	549715		
10437867004	062718-Randall	EPA 353.2	549717		
10437867005	062718-Lang	EPA 353.2	549715		
10437867006	062718-Lashaw	EPA 353.2	549715		
10437867007	062718-Silva	EPA 353.2	549715		
10437867008	062718-Stark	EPA 353.2	549715		
10437867009	062718-FD2	EPA 353.2	549715		
10437867010	062718-LashawAg	EPA 353.2	549715		
10437867001	062718-Asher	EPA 410.4	549425	EPA 410.4	549578
10437867002	062718-Thorson	EPA 410.4	549425	EPA 410.4	549578
10437867003	062718-Marlow	EPA 410.4	549425	EPA 410.4	549578
10437867004	062718-Randall	EPA 410.4	549997	EPA 410.4	550150

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437867

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437867005	**062718-Lang**	EPA 410.4	549425	EPA 410.4	549578
10437867006	**062718-Lashaw**	EPA 410.4	549425	EPA 410.4	549578
10437867007	**062718-Silva**	EPA 410.4	549425	EPA 410.4	549578
10437867008	**062718-Stark**	EPA 410.4	549425	EPA 410.4	549578
10437867009	**062718-FD2**	EPA 410.4	549425	EPA 410.4	549578
10437867010	**062718-LashawAg**	EPA 410.4	549425	EPA 410.4	549578
10437867001	**062718-Asher**	SM 5310C	146775		
10437867002	**062718-Thorson**	SM 5310C	146775		
10437867003	**062718-Marlow**	SM 5310C	146775		
10437867004	**062718-Randall**	SM 5310C	146772		
10437867005	**062718-Lang**	SM 5310C	146775		
10437867006	**062718-Lashaw**	SM 5310C	146775		
10437867007	**062718-Silva**	SM 5310C	146775		
10437867008	**062718-Stark**	SM 5310C	146775		
10437867009	**062718-FD2**	SM 5310C	146775		
10437867010	**062718-LashawAg**	SM 5310C	146775		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: / Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

WO#: 10437867

10437867

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS
1	062718-Asher	WT	G	6/27	1500	—	—	—	9
2	062718-Thorsen				1320				27
3	062718-Marlow				1430				27
4	062718-Randall				1520				27
5	062718-Lang				1600				9
6	062718-Lashaw				1620				9
7	062718-Silva				1720				9
8	062718-Stark				1735				9
9	062718-FD02				1605				9
10	062718-Lashaw Ag				1645				9
11	Trip Blank			—	—	—	—	—	2
12									

ITEM #	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	X	X	X		X				X	X	X	X	X	X	X	X	X				001
2	X	X	X		X				X	X	X	X	X	X	X	X	X		X		MS/MSD 002
3	X	X	X		X				X	X	X	X	X	X	X	X	X		X		MS/MSD 003
4	X	X	X		X				X	X	X	X	X	X	X	X	X		X		MS/MSD 004
5	X	X	X		X				X	X	X	X	X	X	X	X	X				005
6	X	X	X		X				X	X	X	X	X	X	X	X	X				006
7	X	X	X		X				X	X	X	X	X	X	X	X	X				007
8	X	X	X		X				X	X	X	X	X	X	X	X	X				008
9	X	X	X		X				X	X	X	X	X	X	X	X	X				009
10	X	X	X		X				X	X	X	X	X	X	X	X	X				010
11								X													011
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	6/28/18	1530	[signature] Pace	6/30/18	930	3.3 3.5	Y	Y	Y
*Field filtered by client							4.4 4.7			
							3.2 4.8			

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority:

WO# : 10437867
PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill **Project #:**

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2406/2336/2417/2369/2347/2358

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.2, 3.4, 4.5, 4.6, 3.1, 4.1 **Cooler Temp Corrected (°C):** 3.3, 3.3, 5, 4.6, 4.7, 3.2, 4.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/30/18 J

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12. 062718-Stark labeled as 062718-Silva verified by time
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO₃ 1/1 ☑ H₂SO₄ 1/1 ☑ NaOH/Zinc 1/1 Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1, 5-10 2-4 3/3 3/3 3/3
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. 2TB
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 163526				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1220	Temp: See above	Corrected Temp: See above
Time: 1240	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437867 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/30/2018 Results Requested By: 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	062718-Asher	PS	6/27/2018 13:00	10437867001	Water	2	X	
2	062718-Thorson	RQS	6/27/2018 13:20	10437867002	Water	6	X	RQS
3	062718-Marlow	RQS	6/27/2018 14:30	10437867003	Water	6	X	RQS
4	062718-Randall	RQS	6/27/2018 15:20	10437867004	Water	6	X	RQS
5	062718-Lang	PS	6/27/2018 16:00	10437867005	Water	2	X	
6	062718-Lashaw	PS	6/27/2018 16:20	10437867006	Water	2	X	
7	062718-Silva	PS	6/27/2018 17:20	10437867007	Water	2	X	
8	062718-Stark	PS	6/27/2018 17:35	10437867008	Water	2	X	
9	062718-FD2	PS	6/27/2018 16:05	10437867009	Water	2	X	
10	062718-LashawAg	PS	6/27/2018 16:45	10437867010	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature]	7/2/18 1240	B Mathews	7/3/18 1040	
2					
3					

Cooler Temperature on Receipt 1.8 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mpls

Project #:

WO#: 12111471

PM: HRZ **Due Date: 07/17/18**

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: ______

Tracking Number: ______

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No   Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: ______   Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808   Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5   Cooler Temp Corrected °C: 1.8   Biological Tissue Frozen? ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6°C   Correction Factor: +0.3   Date and Initials of Person Examining Contents: BDM 7/3/18

	Yes	No	N/A	Comments:
Chain of Custody Present?	☐	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☐	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑	☐	☐	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION   Field Data Required? ☐ Yes ☐ No

Person Contacted: ______   Date/Time: ______

Comments/Resolution: ______

FECAL WAIVER ON FILE Y N   TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature]   Date: 7/5/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Pace Analytical®
www.pacelabs.com

Workorder: 10437867 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 6/30/2018 **Results Requested By:** 7/17/2018

Report To
Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To
Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

Requested Analysis

WO#: 2079580
2079580

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	062718-Asher	PS	6/27/2018 13:00	10437867001	Water	1	X	
2	062718-Thorson	RQS	6/27/2018 13:20	10437867002	Water	3	X	RQS
3	062718-Marlow	RQS	6/27/2018 14:30	10437867003	Water	3	X	RQS
4	062718-Randall	RQS	6/27/2018 15:20	10437867004	Water	3	X	RQS
5	062718-Lang	PS	6/27/2018 16:00	10437867005	Water	1	X	
6	062718-Lashaw	PS	6/27/2018 16:20	10437867006	Water	1	X	
7	062718-Silva	PS	6/27/2018 17:20	10437867007	Water	1	X	
8	062718-Stark	PS	6/27/2018 17:35	10437867008	Water	1	X	
9	062718-FD2	PS	6/27/2018 16:05	10437867009	Water	1	X	
10	062718-LashawAg	PS	6/27/2018 16:45	10437867010	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/2/18 1730	Fed Ex	
2	Fed Ex	7/3/18 0925	[signature]	7/3/18 0925
3				

Comments

Cooler Temperature on Receipt 1.2 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

Sample Condition Upon Receipt

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Pr

WO#: 2079580

PM: CMM Due Date: 07/18/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS [

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/3/18 CMM

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑ Yes ☐ No ☐ N/A	1
Chain of Custody Present:	☑ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☑ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☑ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes ☑ No ☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☑ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☑ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☑ N/A	9
Sample Labels match COC:	☑ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes ☐ No ☐ N/A	13 If No, was preserative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☑ N/A	14
Trip Blank Present:	☐ Yes ☑ No	15

Client Notification/ Resolution:

Person Contacted: ________________ Date/Time: ________

Comments/ Resolution: ________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437874

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437874001	**062718-MW6U**	Water	06/27/18 08:45	06/30/18 09:30
10437874002	**062718-MW6D**	Water	06/27/18 09:45	06/30/18 09:30
10437874003	**062718-MW4D**	Water	06/27/18 10:45	06/30/18 09:30
10437874004	**Trip Blank**	Water	06/27/18 00:00	06/30/18 09:30
10437874005	**062718-FD01**	Water	06/27/18 09:50	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437874001	**062718-MW6U**	EPA 8260B	AEZ	83	PASI-M
10437874002	**062718-MW6D**	EPA 8260B	AEZ	83	PASI-M
10437874003	**062718-MW4D**	EPA 8260B	AEZ	83	PASI-M
10437874004	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M
10437874005	**062718-FD01**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437874001	**062718-MW6U**					
EPA 8260B	Carbon disulfide	0.23J	ug/L	1.0	07/07/18 14:56	B
EPA 8260B	Carbon tetrachloride	51.1	ug/L	0.50	07/07/18 14:56	
EPA 8260B	Chloroform	2.1	ug/L	1.0	07/07/18 14:56	
10437874002	**062718-MW6D**					
EPA 8260B	Carbon tetrachloride	0.34J	ug/L	0.50	07/07/18 15:19	
10437874003	**062718-MW4D**					
EPA 8260B	Carbon tetrachloride	1.8	ug/L	0.50	07/07/18 18:28	
EPA 8260B	Chloroform	1.2	ug/L	1.0	07/07/18 18:28	
10437874005	**062718-FD01**					
EPA 8260B	Carbon tetrachloride	0.33J	ug/L	0.50	07/07/18 18:52	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

General Information:
5 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548998

B: Analyte was detected in the associated method blank.

- BLANK for HBN 548998 [MSV/4456 (Lab ID: 2984419)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548998

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 09, 2018

Analyte Comments:

QC Batch: 548998

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062718-FD01 (Lab ID: 10437874005)
  - Dichlorofluoromethane
- 062718-MW4D (Lab ID: 10437874003)
  - Dichlorofluoromethane
- 062718-MW6D (Lab ID: 10437874002)
  - Dichlorofluoromethane
- 062718-MW6U (Lab ID: 10437874001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2984419)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2984424)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2984420)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2984423)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10437874004)
  - Dichlorofluoromethane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW6U **Lab ID: 10437874001** Collected: 06/27/18 08:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 14:56	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 14:56	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 14:56	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 14:56	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 14:56	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 14:56	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 14:56	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 14:56	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 14:56	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 14:56	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 14:56	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 14:56	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 14:56	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 14:56	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 14:56	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 14:56	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 14:56	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 14:56	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 14:56	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 14:56	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 14:56	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 14:56	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 14:56	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 14:56	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 14:56	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 14:56	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 14:56	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 14:56	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 14:56	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 14:56	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 14:56	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 14:56	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 14:56	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 14:56	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 14:56	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 14:56	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 14:56	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 14:56	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 14:56	74-83-9	
Carbon disulfide	**0.23J**	ug/L	1.0	0.078	1		07/07/18 14:56	75-15-0	B
Carbon tetrachloride	**51.1**	ug/L	0.50	0.19	1		07/07/18 14:56	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 14:56	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 14:56	75-00-3	
Chloroform	**2.1**	ug/L	1.0	0.45	1		07/07/18 14:56	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 14:56	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 14:56	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW6U **Lab ID: 10437874001** Collected: 06/27/18 08:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 14:56	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 14:56	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 14:56	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 14:56	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 14:56	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 14:56	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 14:56	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 14:56	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 14:56	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 14:56	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 14:56	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 14:56	100-42-5	M1
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 14:56	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 14:56	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 14:56	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 14:56	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 14:56	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 14:56	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 14:56	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 14:56	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 14:56	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 14:56	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 14:56	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 14:56	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 14:56	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 14:56	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 14:56	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 14:56	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 14:56	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 14:56	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 14:56	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 14:56	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 14:56	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 14:56	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 14:56	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 14:56	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/07/18 14:56	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW6D **Lab ID: 10437874002** Collected: 06/27/18 09:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 15:19	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 15:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 15:19	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 15:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 15:19	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 15:19	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 15:19	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 15:19	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 15:19	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 15:19	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 15:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 15:19	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 15:19	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 15:19	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 15:19	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 15:19	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 15:19	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 15:19	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 15:19	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 15:19	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 15:19	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 15:19	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 15:19	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 15:19	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 15:19	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 15:19	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 15:19	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 15:19	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 15:19	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 15:19	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 15:19	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 15:19	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 15:19	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 15:19	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 15:19	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 15:19	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 15:19	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 15:19	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 15:19	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 15:19	75-15-0	
Carbon tetrachloride	**0.34J**	ug/L	0.50	0.19	1		07/07/18 15:19	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 15:19	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 15:19	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 15:19	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 15:19	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 15:19	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW6D **Lab ID: 10437874002** Collected: 06/27/18 09:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 15:19	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 15:19	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 15:19	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 15:19	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 15:19	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 15:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 15:19	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 15:19	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 15:19	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 15:19	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 15:19	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 15:19	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 15:19	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 15:19	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 15:19	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 15:19	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 15:19	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 15:19	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 15:19	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 15:19	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 15:19	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 15:19	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 15:19	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 15:19	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 15:19	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 15:19	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 15:19	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 15:19	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 15:19	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 15:19	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 15:19	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 15:19	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 15:19	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 15:19	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 15:19	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/07/18 15:19	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/07/18 15:19	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW4D **Lab ID: 10437874003** Collected: 06/27/18 10:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:28	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:28	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:28	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 18:28	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:28	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:28	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:28	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:28	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 18:28	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:28	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:28	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 18:28	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:28	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:28	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:28	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:28	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:28	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:28	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:28	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 18:28	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:28	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 18:28	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 18:28	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 18:28	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 18:28	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:28	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 18:28	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 18:28	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 18:28	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 18:28	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:28	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 18:28	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:28	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:28	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:28	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:28	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 18:28	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 18:28	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 18:28	75-15-0	
Carbon tetrachloride	**1.8**	ug/L	0.50	0.19	1		07/07/18 18:28	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:28	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 18:28	75-00-3	
Chloroform	**1.2**	ug/L	1.0	0.45	1		07/07/18 18:28	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:28	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:28	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-MW4D **Lab ID: 10437874003** Collected: 06/27/18 10:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 18:28	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 18:28	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 18:28	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 18:28	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:28	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:28	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:28	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:28	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:28	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 18:28	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 18:28	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 18:28	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:28	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 18:28	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 18:28	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 18:28	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 18:28	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 18:28	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 18:28	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 18:28	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:28	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:28	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:28	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:28	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:28	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:28	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:28	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:28	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 18:28	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:28	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:28	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:28	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:28	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 18:28	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 18:28	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 18:28	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/07/18 18:28	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: Trip Blank **Lab ID: 10437874004** Collected: 06/27/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:34	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:34	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:34	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 12:34	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:34	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:34	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:34	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 12:34	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 12:34	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:34	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:34	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 12:34	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 12:34	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:34	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 12:34	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 12:34	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 12:34	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:34	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:34	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 12:34	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:34	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 12:34	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 12:34	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 12:34	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 12:34	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:34	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 12:34	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 12:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 12:34	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 12:34	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 12:34	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 12:34	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 12:34	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 12:34	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 12:34	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 12:34	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 12:34	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 12:34	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 12:34	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 12:34	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:34	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 12:34	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 12:34	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 12:34	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:34	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437874

Sample: Trip Blank **Lab ID: 10437874004** Collected: 06/27/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 12:34	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 12:34	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 12:34	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 12:34	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:34	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 12:34	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 12:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:34	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:34	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 12:34	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 12:34	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 12:34	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 12:34	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 12:34	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 12:34	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 12:34	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 12:34	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 12:34	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 12:34	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 12:34	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:34	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 12:34	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 12:34	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 12:34	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 12:34	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 12:34	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:34	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:34	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 12:34	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 12:34	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 12:34	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 12:34	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 12:34	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 12:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 12:34	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 12:34	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 12:34	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-FD01 **Lab ID: 10437874005** Collected: 06/27/18 09:50 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:52	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:52	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 18:52	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:52	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:52	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:52	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 18:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 18:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:52	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:52	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:52	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:52	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 18:52	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 18:52	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 18:52	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 18:52	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 18:52	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:52	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 18:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 18:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 18:52	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 18:52	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:52	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 18:52	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:52	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 18:52	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 18:52	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 18:52	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 18:52	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 18:52	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 18:52	75-15-0	
Carbon tetrachloride	**0.33J**	ug/L	0.50	0.19	1		07/07/18 18:52	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:52	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 18:52	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 18:52	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 18:52	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:52	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Sample: 062718-FD01 **Lab ID: 10437874005** Collected: 06/27/18 09:50 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 18:52	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 18:52	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 18:52	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 18:52	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 18:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:52	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:52	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 18:52	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 18:52	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 18:52	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 18:52	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 18:52	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 18:52	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 18:52	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 18:52	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 18:52	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 18:52	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 18:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:52	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 18:52	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 18:52	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 18:52	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 18:52	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 18:52	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:52	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:52	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 18:52	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 18:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 18:52	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 18:52	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 18:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 18:52	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/07/18 18:52	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/07/18 18:52	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 18:52	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

QC Batch: 548998 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437874001, 10437874002, 10437874003, 10437874004, 10437874005

METHOD BLANK: 2984419 | Matrix: Water
Associated Lab Samples: 10437874001, 10437874002, 10437874003, 10437874004, 10437874005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 11:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 11:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 11:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 11:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 11:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 11:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 11:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 11:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 11:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 11:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 11:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 11:47	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 11:47	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 11:47	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 11:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 11:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 11:47	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 11:47	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 11:47	
Carbon disulfide	ug/L	0.081J	1.0	0.078	07/07/18 11:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 11:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

METHOD BLANK: 2984419 Matrix: Water
Associated Lab Samples: 10437874001, 10437874002, 10437874003, 10437874004, 10437874005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 11:47	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 11:47	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 11:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 11:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 11:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 11:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 11:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 11:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 11:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 11:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
Methylene Chloride	ug/L	1.1J	4.0	0.98	07/07/18 11:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 11:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 11:47	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 11:47	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 11:47	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 11:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 11:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 11:47	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 11:47	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 11:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 11:47	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 11:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 11:47	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 11:47	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 11:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 11:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 11:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 11:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 11:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 11:47	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/07/18 11:47	
4-Bromofluorobenzene (S)	%.	97	75-125		07/07/18 11:47	
Toluene-d8 (S)	%.	97	75-125		07/07/18 11:47	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.8	104	73-125	
1,1-Dichloropropene	ug/L	20	20.0	100	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.6	103	72-130	
1,2,3-Trichloropropane	ug/L	20	21.1	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.8	94	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.3	107	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	20.8	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.4	102	75-125	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	452	113	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.2	91	64-130	N2
2,2-Dichloropropane	ug/L	20	14.5	73	68-129	
2-Butanone (MEK)	ug/L	100	124	124	65-126	
2-Chlorotoluene	ug/L	20	18.7	93	75-125	
2-Hexanone	ug/L	100	106	106	75-134	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	75-131	
Acetone	ug/L	100	106	106	68-150	
Acrolein	ug/L	200	203	101	63-149	
Acrylonitrile	ug/L	200	234	117	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.6	98	75-125	
Bromochloromethane	ug/L	20	21.4	107	75-125	
Bromodichloromethane	ug/L	20	19.7	99	75-125	
Bromoform	ug/L	20	16.7	84	70-125	
Bromomethane	ug/L	20	12.2	61	30-145	
Carbon disulfide	ug/L	20	17.9	90	67-125	
Carbon tetrachloride	ug/L	20	19.0	95	75-125	
Chlorobenzene	ug/L	20	20.0	100	75-125	
Chloroethane	ug/L	20	22.0	110	73-131	
Chloroform	ug/L	20	21.0	105	75-125	
Chloromethane	ug/L	20	18.2	91	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.4	87	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

LABORATORY CONTROL SAMPLE: 2984420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.5	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	103	64-127	
Dichlorofluoromethane	ug/L	20	21.4	107	75-125	N2
Diisopropyl ether	ug/L	20	21.6	108	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.4	97	75-125	
m&p-Xylene	ug/L	40	40.2	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.9	100	75-125	
Methylene Chloride	ug/L	20	20.8	104	72-125	
n-Butylbenzene	ug/L	20	19.6	98	75-125	
n-Propylbenzene	ug/L	20	18.9	94	75-125	
Naphthalene	ug/L	20	19.5	98	61-136	
o-Xylene	ug/L	20	19.4	97	75-125	
p-Isopropyltoluene	ug/L	20	19.1	96	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.8	94	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	18.6	93	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	186	93	64-150	
Toluene	ug/L	20	19.5	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	35.9	71	57-126	
Trichloroethene	ug/L	20	21.5	107	75-125	
Trichlorofluoromethane	ug/L	20	21.4	107	74-126	
Vinyl acetate	ug/L	20	15.7	78	72-129	
Vinyl chloride	ug/L	20	21.7	109	71-130	
Xylene (Total)	ug/L	60	59.6	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.9	95	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	21.1	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	21.3	106	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.1	110	75-136	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	22.3	112	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.8	104	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	20.2	101	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.0	90	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	18.4	92	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.8	88	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.7	103	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	19.2	96	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	20.7	104	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	42.5	106	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	19.5	97	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	19.6	98	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	428	107	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	18.2	91	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	15.0	75	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	113	113	59-125	
2-Chlorotoluene	ug/L	<0.16	20	18.4	92	73-126	
2-Hexanone	ug/L	<0.88	100	97.9	98	68-138	
4-Chlorotoluene	ug/L	<0.13	20	18.8	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	95.1	95	75-150	
Acrolein	ug/L	<1.2	200	177	88	53-150	
Acrylonitrile	ug/L	<0.91	200	215	107	69-127	
Benzene	ug/L	<0.10	20	21.0	105	74-125	
Bromobenzene	ug/L	<0.21	20	19.3	97	75-125	
Bromochloromethane	ug/L	<0.27	20	20.7	104	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.5	97	75-125	
Bromoform	ug/L	<0.80	20	15.5	78	68-125	
Bromomethane	ug/L	<1.8	20	12.8	64	37-149	
Carbon disulfide	ug/L	0.23J	20	19.3	95	66-139	
Carbon tetrachloride	ug/L	51.1	20	70.5	97	75-127	
Chlorobenzene	ug/L	<0.17	20	19.5	98	75-125	
Chloroethane	ug/L	<0.49	20	21.8	109	73-134	
Chloroform	ug/L	2.1	20	22.9	104	71-125	
Chloromethane	ug/L	<0.16	20	17.2	86	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	21.0	105	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	16.9	84	71-125	
Dibromochloromethane	ug/L	<0.12	20	18.6	93	75-125	
Dibromomethane	ug/L	<0.16	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	20.4	102	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	20.9	104	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	22.0	110	66-131	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

MATRIX SPIKE SAMPLE: 2984423

Parameter	Units	10437874001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	19.4	97	74-125	
Ethylbenzene	ug/L	<0.14	20	19.1	96	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	18.6	93	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.7	94	75-125	
m&p-Xylene	ug/L	<0.31	40	38.1	95	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	19.7	98	75-125	
Methylene Chloride	ug/L	<0.98	20	19.4	97	72-125	
n-Butylbenzene	ug/L	<0.24	20	19.0	95	73-140	
n-Propylbenzene	ug/L	<0.10	20	18.6	93	75-126	
Naphthalene	ug/L	<0.48	20	18.7	93	61-136	
o-Xylene	ug/L	<0.16	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.6	88	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.5	93	75-132	
Styrene	ug/L	<0.19	20	11.1	56	71-125	M1
tert-Amylmethyl ether	ug/L	<0.11	20	18.6	93	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	213	107	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.8	89	75-126	
Tetrachloroethene	ug/L	<0.17	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	<2.2	200	176	88	75-150	
Toluene	ug/L	<0.083	20	19.2	96	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	21.5	107	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	18.4	92	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	35.2	70	57-125	
Trichloroethene	ug/L	<0.15	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	20.5	103	75-135	
Vinyl acetate	ug/L	<1.1	20	15.0	75	57-136	
Vinyl chloride	ug/L	<0.092	20	21.5	107	74-141	
Xylene (Total)	ug/L	<0.31	60	57.7	96	75-125	
1,2-Dichloroethane-d4 (S)	%.				105	75-125	
4-Bromofluorobenzene (S)	%.				97	75-125	
Toluene-d8 (S)	%.				100	75-125	

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	<9.2	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	<0.078	<0.078		30	
Carbon tetrachloride	ug/L	0.34J	0.32J		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

SAMPLE DUPLICATE: 2984424

Parameter	Units	10437874002 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	106	0		
4-Bromofluorobenzene (S)	%.	99	96	3		
Toluene-d8 (S)	%.	98	100	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 548998

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437874

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437874001	**062718-MW6U**	EPA 8260B	548998		
10437874002	**062718-MW6D**	EPA 8260B	548998		
10437874003	**062718-MW4D**	EPA 8260B	548998		
10437874004	**Trip Blank**	EPA 8260B	548998		
10437874005	**062718-FD01**	EPA 8260B	548998		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

WO# : 10437874

10437874

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	062718-MW6U	WT	G	6/27	845	—	—	—	3				X				X												001
2	062718-MW6D	↓	↓	↓	945	—	—	—	3				X				X												002
3	062718-MW4D	↓	↓	↓	1045	—	—	—	3				X				X												003
4	Trip Blank	↓	↓	↓	—	—	—	—	2				X				X												004
5	062718-FD01	WT	G	—	950	—	—	—	3				X				X												005
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	4.7	Y	Y	Y
*Field filtered by client							4.9			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinozo

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/27/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M H.I) **Project #:**

WO#: 10437874
PM: JMG **Due Date: 07/10/18**
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 744810332417,2358

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.6, 4.8 **Cooler Temp Corrected (°C):** 4.7, 4.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** EM 6/30/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		JMG 070218
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☑ No 6/30		Yes Not Requested
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		JMG 070218
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. see exception
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 163526				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		Corrected Temp:
Opened Time: 1340	Temp: 4.7, 4.9	
Time: 1350	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 070218

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062718-MW6U	1	1	1	3
" -MW4D	2	0	1	3
" -FD01	0	1	2	3

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 12, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
www.pacelabs.com

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(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437875

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437875001	**062718-MW6U**	Water	06/27/18 08:45	06/30/18 09:30
10437875002	**062718-MW6D**	Water	06/27/18 09:45	06/30/18 09:30
10437875003	**062718-MW4D**	Water	06/27/18 10:45	06/30/18 09:30
10437875004	**062718-FD01**	Water	06/27/18 09:50	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437875001	**062718-MW6U**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437875002	**062718-MW6D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437875003	**062718-MW4D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437875004	**062718-FD01**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437875001	**062718-MW6U**					
EPA 6010D	Aluminum, Dissolved	140J	ug/L	200	07/09/18 17:53	
EPA 6010D	Barium, Dissolved	46.8	ug/L	10.0	07/09/18 17:53	
EPA 6010D	Calcium, Dissolved	60700	ug/L	500	07/09/18 17:53	
EPA 6010D	Cobalt, Dissolved	0.65J	ug/L	10.0	07/09/18 17:53	
EPA 6010D	Iron, Dissolved	133	ug/L	50.0	07/09/18 17:53	
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	07/09/18 17:53	
EPA 6010D	Magnesium, Dissolved	18900	ug/L	500	07/09/18 17:53	
EPA 6010D	Manganese, Dissolved	9.0	ug/L	5.0	07/09/18 17:53	
EPA 6010D	Potassium, Dissolved	1650J	ug/L	2500	07/09/18 17:53	
EPA 6010D	Sodium, Dissolved	14700	ug/L	1000	07/09/18 17:53	
EPA 6010D	Vanadium, Dissolved	5.5J	ug/L	15.0	07/09/18 17:53	
EPA 6010D	Zinc, Dissolved	2.8J	ug/L	20.0	07/09/18 17:53	
EPA 7470A	Mercury, Dissolved	0.27	ug/L	0.20	07/09/18 18:42	
SM 2320B	Alkalinity, Total as CaCO3	257	mg/L	5.0	07/11/18 11:12	
SM 2540C	Total Dissolved Solids	304	mg/L	20.0	07/03/18 15:26	
EPA 300.0	Chloride	4.4	mg/L	1.2	06/30/18 22:42	FS
EPA 300.0	Nitrate as N	2.1	mg/L	0.10	06/30/18 22:42	FS,H3
EPA 300.0	Sulfate	8.1	mg/L	1.2	06/30/18 22:42	FS
EPA 353.2	Nitrogen, NO2 plus NO3	2.3	mg/L	0.50	07/11/18 13:10	
SM 5310C	Total Organic Carbon	1.8	mg/L	1.0	07/10/18 04:50	
10437875002	**062718-MW6D**					
EPA 6010D	Aluminum, Dissolved	17.3J	ug/L	200	07/09/18 17:55	
EPA 6010D	Barium, Dissolved	7.4J	ug/L	10.0	07/09/18 17:55	
EPA 6010D	Calcium, Dissolved	28900	ug/L	500	07/09/18 17:55	
EPA 6010D	Iron, Dissolved	12.0J	ug/L	50.0	07/09/18 17:55	
EPA 6010D	Magnesium, Dissolved	12800	ug/L	500	07/09/18 17:55	
EPA 6010D	Manganese, Dissolved	36.2	ug/L	5.0	07/09/18 17:55	
EPA 6010D	Potassium, Dissolved	8060	ug/L	2500	07/09/18 17:55	
EPA 6010D	Sodium, Dissolved	17500	ug/L	1000	07/09/18 17:55	
EPA 6010D	Vanadium, Dissolved	5.3J	ug/L	15.0	07/09/18 17:55	
EPA 6010D	Zinc, Dissolved	4.4J	ug/L	20.0	07/09/18 17:55	
SM 2320B	Alkalinity, Total as CaCO3	173	mg/L	5.0	07/11/18 11:17	
SM 2540C	Total Dissolved Solids	210	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	2.2	mg/L	1.2	06/30/18 22:57	
EPA 300.0	Nitrate as N	0.12	mg/L	0.10	06/30/18 22:57	H3
EPA 300.0	Sulfate	5.5	mg/L	1.2	06/30/18 22:57	
EPA 353.2	Nitrogen, NO2 plus NO3	0.12	mg/L	0.10	07/11/18 12:11	
SM 5310C	Total Organic Carbon	1.6	mg/L	1.0	07/10/18 05:06	
10437875003	**062718-MW4D**					
EPA 6010D	Barium, Dissolved	59.8	ug/L	10.0	07/09/18 17:56	
EPA 6010D	Calcium, Dissolved	36800	ug/L	500	07/09/18 17:56	
EPA 6010D	Iron, Dissolved	4.4J	ug/L	50.0	07/09/18 17:56	
EPA 6010D	Magnesium, Dissolved	11900	ug/L	500	07/09/18 17:56	
EPA 6010D	Manganese, Dissolved	12.3	ug/L	5.0	07/09/18 17:56	
EPA 6010D	Nickel, Dissolved	18.6J	ug/L	20.0	07/09/18 17:56	
EPA 6010D	Potassium, Dissolved	2830	ug/L	2500	07/09/18 17:56	

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437875003	**062718-MW4D**					
EPA 6010D	Sodium, Dissolved	26500	ug/L	1000	07/09/18 17:56	
EPA 6010D	Vanadium, Dissolved	6.4J	ug/L	15.0	07/09/18 17:56	
EPA 6010D	Zinc, Dissolved	7.8J	ug/L	20.0	07/09/18 17:56	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	07/11/18 11:21	
SM 2540C	Total Dissolved Solids	268	mg/L	20.0	07/03/18 15:26	
EPA 300.0	Chloride	40.8	mg/L	1.2	06/30/18 23:12	FS
EPA 300.0	Nitrate as N	0.49	mg/L	0.10	06/30/18 23:12	FS,H3
EPA 300.0	Sulfate	12.4	mg/L	1.2	06/30/18 23:12	FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.72	mg/L	0.10	07/11/18 12:12	
EPA 410.4	Chemical Oxygen Demand	19.9J	mg/L	50.0	07/10/18 15:50	
SM 5310C	Total Organic Carbon	2.6	mg/L	1.0	07/10/18 05:23	
10437875004	**062718-FD01**					
EPA 6010D	Barium, Dissolved	7.1J	ug/L	10.0	07/09/18 17:58	
EPA 6010D	Calcium, Dissolved	29000	ug/L	500	07/09/18 17:58	
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	07/09/18 17:58	
EPA 6010D	Magnesium, Dissolved	12800	ug/L	500	07/09/18 17:58	
EPA 6010D	Manganese, Dissolved	35.3	ug/L	5.0	07/09/18 17:58	
EPA 6010D	Potassium, Dissolved	8040	ug/L	2500	07/09/18 17:58	
EPA 6010D	Sodium, Dissolved	17400	ug/L	1000	07/09/18 17:58	
EPA 6010D	Vanadium, Dissolved	5.3J	ug/L	15.0	07/09/18 17:58	
SM 2320B	Alkalinity, Total as CaCO3	182	mg/L	5.0	07/11/18 12:16	
SM 2540C	Total Dissolved Solids	213	mg/L	10.0	07/03/18 15:26	
EPA 300.0	Chloride	2.2	mg/L	1.2	06/30/18 23:27	
EPA 300.0	Nitrate as N	0.12	mg/L	0.10	06/30/18 23:27	H3
EPA 300.0	Sulfate	5.4	mg/L	1.2	06/30/18 23:27	
EPA 353.2	Nitrogen, NO2 plus NO3	0.13	mg/L	0.10	07/11/18 12:13	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	07/10/18 05:39	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437875

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 114031

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 491418)
  - Sulfide, Total
- MS (Lab ID: 491420)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- 062718-FD01 (Lab ID: 10437875004)
- 062718-MW4D (Lab ID: 10437875003)
- 062718-MW6D (Lab ID: 10437875002)
- 062718-MW6U (Lab ID: 10437875001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547969

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2979323)
  - Chloride
  - Nitrate as N
- MSD (Lab ID: 2979324)
  - Chloride
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437875

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW6U **Lab ID: 10437875001** Collected: 06/27/18 08:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 13:14	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 13:14	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 13:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**140J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:53	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:53	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:53	7440-38-2	
Barium, Dissolved	**46.8**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:53	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:53	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:53	7440-43-9	
Calcium, Dissolved	**60700**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:53	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:53	7440-47-3	
Cobalt, Dissolved	**0.65J**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:53	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:53	7440-50-8	
Iron, Dissolved	**133**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:53	7439-89-6	
Lead, Dissolved	**2.5J**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:53	7439-92-1	
Magnesium, Dissolved	**18900**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:53	7439-95-4	
Manganese, Dissolved	**9.0**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:53	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:53	7440-02-0	
Potassium, Dissolved	**1650J**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:53	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:53	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:53	7440-22-4	
Sodium, Dissolved	**14700**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:53	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:53	7440-28-0	
Vanadium, Dissolved	**5.5J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:53	7440-62-2	
Zinc, Dissolved	**2.8J**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:53	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.27**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:42	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**257**	mg/L	5.0	1.0	1		07/11/18 11:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**304**	mg/L	20.0	10.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:52	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.4**	mg/L	1.2	0.28	1		06/30/18 22:42	16887-00-6	FS
Nitrate as N	**2.1**	mg/L	0.10	0.015	1		06/30/18 22:42	14797-55-8	FS,H3
Sulfate	**8.1**	mg/L	1.2	0.19	1		06/30/18 22:42	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW6U **Lab ID: 10437875001** Collected: 06/27/18 08:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.3**	mg/L	0.50	0.054	5		07/11/18 13:10		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:49		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.20	1		07/10/18 04:50	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW6D **Lab ID: 10437875002** Collected: 06/27/18 09:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 13:21	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 13:21	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 13:21	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**17.3J**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:55	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:55	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:55	7440-38-2	
Barium, Dissolved	**7.4J**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:55	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:55	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:55	7440-43-9	
Calcium, Dissolved	**28900**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:55	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:55	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:55	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:55	7440-50-8	
Iron, Dissolved	**12.0J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:55	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:55	7439-92-1	
Magnesium, Dissolved	**12800**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:55	7439-95-4	
Manganese, Dissolved	**36.2**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:55	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:55	7440-02-0	
Potassium, Dissolved	**8060**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:55	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:55	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:55	7440-22-4	
Sodium, Dissolved	**17500**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:55	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:55	7440-28-0	
Vanadium, Dissolved	**5.3J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:55	7440-62-2	
Zinc, Dissolved	**4.4J**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:55	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:45	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**173**	mg/L	5.0	1.0	1		07/11/18 11:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**210**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:52	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.2	0.28	1		06/30/18 22:57	16887-00-6	
Nitrate as N	**0.12**	mg/L	0.10	0.015	1		06/30/18 22:57	14797-55-8	H3
Sulfate	**5.5**	mg/L	1.2	0.19	1		06/30/18 22:57	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW6D **Lab ID: 10437875002** Collected: 06/27/18 09:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.12**	mg/L	0.10	0.011	1		07/11/18 12:11		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:49		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.6**	mg/L	1.0	0.20	1		07/10/18 05:06	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW4D **Lab ID: 10437875003** Collected: 06/27/18 10:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 13:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 13:29	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 13:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:56	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:56	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:56	7440-38-2	
Barium, Dissolved	**59.8**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:56	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:56	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:56	7440-43-9	
Calcium, Dissolved	**36800**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:56	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:56	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:56	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:56	7440-50-8	
Iron, Dissolved	**4.4J**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:56	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:56	7439-92-1	
Magnesium, Dissolved	**11900**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:56	7439-95-4	
Manganese, Dissolved	**12.3**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:56	7439-96-5	
Nickel, Dissolved	**18.6J**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:56	7440-02-0	
Potassium, Dissolved	**2830**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:56	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:56	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:56	7440-22-4	
Sodium, Dissolved	**26500**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:56	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:56	7440-28-0	
Vanadium, Dissolved	**6.4J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:56	7440-62-2	
Zinc, Dissolved	**7.8J**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:56	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:47	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**154**	mg/L	5.0	1.0	1		07/11/18 11:21		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**268**	mg/L	20.0	10.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:53	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**40.8**	mg/L	1.2	0.28	1		06/30/18 23:12	16887-00-6	FS
Nitrate as N	**0.49**	mg/L	0.10	0.015	1		06/30/18 23:12	14797-55-8	FS,H3
Sulfate	**12.4**	mg/L	1.2	0.19	1		06/30/18 23:12	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-MW4D **Lab ID: 10437875003** Collected: 06/27/18 10:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.72**	mg/L	0.10	0.011	1		07/11/18 12:12		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**19.9J**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:50		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.6**	mg/L	1.0	0.20	1		07/10/18 05:23	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-FD01 **Lab ID: 10437875004** Collected: 06/27/18 09:50 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 13:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 13:36	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 13:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/09/18 08:45	07/09/18 17:58	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/09/18 08:45	07/09/18 17:58	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/09/18 08:45	07/09/18 17:58	7440-38-2	
Barium, Dissolved	**7.1J**	ug/L	10.0	0.18	1	07/09/18 08:45	07/09/18 17:58	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/09/18 08:45	07/09/18 17:58	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/09/18 08:45	07/09/18 17:58	7440-43-9	
Calcium, Dissolved	**29000**	ug/L	500	13.9	1	07/09/18 08:45	07/09/18 17:58	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/09/18 08:45	07/09/18 17:58	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/09/18 08:45	07/09/18 17:58	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/09/18 08:45	07/09/18 17:58	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/09/18 08:45	07/09/18 17:58	7439-89-6	
Lead, Dissolved	**2.5J**	ug/L	10.0	2.0	1	07/09/18 08:45	07/09/18 17:58	7439-92-1	
Magnesium, Dissolved	**12800**	ug/L	500	9.8	1	07/09/18 08:45	07/09/18 17:58	7439-95-4	
Manganese, Dissolved	**35.3**	ug/L	5.0	0.22	1	07/09/18 08:45	07/09/18 17:58	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/09/18 08:45	07/09/18 17:58	7440-02-0	
Potassium, Dissolved	**8040**	ug/L	2500	310	1	07/09/18 08:45	07/09/18 17:58	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/09/18 08:45	07/09/18 17:58	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/09/18 08:45	07/09/18 17:58	7440-22-4	
Sodium, Dissolved	**17400**	ug/L	1000	21.5	1	07/09/18 08:45	07/09/18 17:58	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/09/18 08:45	07/09/18 17:58	7440-28-0	
Vanadium, Dissolved	**5.3J**	ug/L	15.0	0.29	1	07/09/18 08:45	07/09/18 17:58	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/09/18 08:45	07/09/18 17:58	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/09/18 07:15	07/09/18 18:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**182**	mg/L	5.0	1.0	1		07/11/18 12:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**213**	mg/L	10.0	5.0	1		07/03/18 15:26		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:53	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.2	0.28	1		06/30/18 23:27	16887-00-6	
Nitrate as N	**0.12**	mg/L	0.10	0.015	1		06/30/18 23:27	14797-55-8	H3
Sulfate	**5.4**	mg/L	1.2	0.19	1		06/30/18 23:27	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Sample: 062718-FD01 **Lab ID: 10437875004** Collected: 06/27/18 09:50 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.13**	mg/L	0.10	0.011	1		07/11/18 12:13		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:50		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.20	1		07/10/18 05:39	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 548415 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2981181 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/03/18 12:46	
Ethene	ug/L	<2.9	10.0	2.9	07/03/18 12:46	
Methane	ug/L	<4.9	10.0	4.9	07/03/18 12:46	

LABORATORY CONTROL SAMPLE & LCSD: 2981182 2981183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	107	96	94	85-115	2	20	
Ethene	ug/L	106	101	100	96	94	85-115	1	20	
Methane	ug/L	60.7	59.4	59.5	98	98	85-115	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2981184 2981185

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	104	147	91	130	30-150	35	20	R1
Ethene	ug/L	<2.9	106	106	96.9	135	91	127	30-150	33	20	R1
Methane	ug/L	<4.9	60.7	60.7	58.7	81.6	94	132	30-150	33	20	R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 548031 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2979620 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/09/18 17:49	

LABORATORY CONTROL SAMPLE: 2979621

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979622 2979623

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.0	4.8	99	96	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979624 2979625

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.1	5.1	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979626 2979627

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.1	5.1	102	101	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 548020 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2979574 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/09/18 17:07	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/09/18 17:07	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/09/18 17:07	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/09/18 17:07	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/09/18 17:07	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/09/18 17:07	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/09/18 17:07	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/09/18 17:07	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/09/18 17:07	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/09/18 17:07	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	07/09/18 17:07	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/09/18 17:07	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/09/18 17:07	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/09/18 17:07	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/09/18 17:07	
Potassium, Dissolved	ug/L	<310	2500	310	07/09/18 17:07	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/09/18 17:07	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/09/18 17:07	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	07/09/18 17:07	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/09/18 17:07	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	07/09/18 17:07	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/09/18 17:07	

LABORATORY CONTROL SAMPLE: 2979575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19800	99	80-120	
Antimony, Dissolved	ug/L	1000	939	94	80-120	
Arsenic, Dissolved	ug/L	1000	948	95	80-120	
Barium, Dissolved	ug/L	1000	951	95	80-120	
Beryllium, Dissolved	ug/L	1000	963	96	80-120	
Cadmium, Dissolved	ug/L	1000	953	95	80-120	
Calcium, Dissolved	ug/L	20000	18600	93	80-120	
Chromium, Dissolved	ug/L	1000	942	94	80-120	
Cobalt, Dissolved	ug/L	1000	949	95	80-120	
Copper, Dissolved	ug/L	1000	906	91	80-120	
Iron, Dissolved	ug/L	20000	18900	94	80-120	
Lead, Dissolved	ug/L	1000	963	96	80-120	
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	955	95	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

LABORATORY CONTROL SAMPLE: 2979575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	950	95	80-120	
Potassium, Dissolved	ug/L	20000	18400	92	80-120	
Selenium, Dissolved	ug/L	1000	1000	100	80-120	
Silver, Dissolved	ug/L	500	474	95	80-120	
Sodium, Dissolved	ug/L	20000	18300	92	80-120	
Thallium, Dissolved	ug/L	1000	945	94	80-120	
Vanadium, Dissolved	ug/L	1000	937	94	80-120	
Zinc, Dissolved	ug/L	1000	966	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979576 2979577

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21400	20900	107	104	75-125	2	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	984	102	98	75-125	4	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1000	102	100	75-125	1	20	
Barium, Dissolved	ug/L	51.0	1000	1000	1060	1060	101	100	75-125	1	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1040	1020	104	102	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1020	1000	102	100	75-125	1	20	
Calcium, Dissolved	ug/L	23200	20000	20000	44400	44100	106	104	75-125	1	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	1010	994	101	99	75-125	2	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	1000	986	100	99	75-125	2	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	968	971	97	97	75-125	0	20	
Iron, Dissolved	ug/L	1120	20000	20000	21400	21000	101	100	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1020	1010	102	101	75-125	1	20	
Magnesium, Dissolved	ug/L	11700	20000	20000	32700	32400	105	104	75-125	1	20	
Manganese, Dissolved	ug/L	26.2	1000	1000	1040	1040	102	102	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	1000	990	100	99	75-125	1	20	
Potassium, Dissolved	ug/L	3580	20000	20000	24200	24000	103	102	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1060	1040	106	104	75-125	1	20	
Silver, Dissolved	ug/L	<0.38	500	500	508	504	102	101	75-125	1	20	
Sodium, Dissolved	ug/L	13500	20000	20000	32900	33400	97	100	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1000	990	100	99	75-125	1	20	
Vanadium, Dissolved	ug/L	0.33J	1000	1000	1000	990	100	99	75-125	1	20	
Zinc, Dissolved	ug/L	18.3J	1000	1000	1040	1030	102	101	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979578 2979579

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	20.2J	20000	20000	20700	20000	103	100	75-125	3	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1000	966	100	96	75-125	3	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1010	966	101	97	75-125	4	20	
Barium, Dissolved	ug/L	28.1	1000	1000	1030	998	100	97	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979578 2979579

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1020	983	102	98	75-125	4	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	963	100	96	75-125	4	20	
Calcium, Dissolved	ug/L	46100	20000	20000	66100	63900	100	89	75-125	3	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	992	952	99	95	75-125	4	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	981	941	98	94	75-125	4	20	
Copper, Dissolved	ug/L	4.3J	1000	1000	970	922	97	92	75-125	5	20	
Iron, Dissolved	ug/L	6.2J	20000	20000	19900	19100	99	95	75-125	4	20	
Lead, Dissolved	ug/L	2.2J	1000	1000	1000	961	100	96	75-125	4	20	
Magnesium, Dissolved	ug/L	13300	20000	20000	33600	32600	101	96	75-125	3	20	
Manganese, Dissolved	ug/L	0.25J	1000	1000	1010	960	101	96	75-125	5	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	981	941	98	94	75-125	4	20	
Potassium, Dissolved	ug/L	1180J	20000	20000	21600	21000	102	99	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1050	1010	105	101	75-125	4	20	
Silver, Dissolved	ug/L	<0.38	500	500	504	482	101	96	75-125	4	20	
Sodium, Dissolved	ug/L	11600	20000	20000	31500	29800	100	91	75-125	5	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	981	949	98	95	75-125	3	20	
Vanadium, Dissolved	ug/L	8.5J	1000	1000	998	958	99	95	75-125	4	20	
Zinc, Dissolved	ug/L	27.0	1000	1000	1030	987	100	96	75-125	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979580 2979581

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	19700	20800	98	104	75-125	6	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	940	1020	94	102	75-125	8	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	952	1010	95	101	75-125	6	20	
Barium, Dissolved	ug/L	22.9	1000	1000	963	1040	94	101	75-125	7	20	
Beryllium, Dissolved	ug/L	0.16J	1000	1000	973	1030	97	103	75-125	6	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	946	1000	95	100	75-125	6	20	
Calcium, Dissolved	ug/L	46200	20000	20000	62100	65600	79	97	75-125	6	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	941	997	94	100	75-125	6	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	925	980	92	98	75-125	6	20	
Copper, Dissolved	ug/L	28.3	1000	1000	936	993	91	96	75-125	6	20	
Iron, Dissolved	ug/L	5.6J	20000	20000	18800	19700	94	98	75-125	5	20	
Lead, Dissolved	ug/L	2.2J	1000	1000	947	1000	94	100	75-125	6	20	
Magnesium, Dissolved	ug/L	14500	20000	20000	32900	34900	92	102	75-125	6	20	
Manganese, Dissolved	ug/L	3.1J	1000	1000	957	1010	95	101	75-125	6	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	931	984	93	98	75-125	6	20	
Potassium, Dissolved	ug/L	1230J	20000	20000	20500	21700	96	103	75-125	6	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	987	1050	99	105	75-125	6	20	
Silver, Dissolved	ug/L	<0.38	500	500	477	505	95	101	75-125	6	20	
Sodium, Dissolved	ug/L	13700	20000	20000	30900	32900	86	96	75-125	6	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	930	995	93	99	75-125	7	20	
Vanadium, Dissolved	ug/L	5.6J	1000	1000	938	998	93	99	75-125	6	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979580 2979581

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Zinc, Dissolved	ug/L	390	1000	1000	1310	1390	92	100	75-125	6	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 549643 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437875001, 10437875002, 10437875003

METHOD BLANK: 2987265 | Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/11/18 08:31	

LABORATORY CONTROL SAMPLE & LCSD: 2987266 | 2987267

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.5	41.9	104	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987268 | 2987269

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	144	40	40	192	187	120	107	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987270 | 2987271

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	157	40	40	201	202	110	113	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 549644 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437875004

METHOD BLANK: 2987272 | Matrix: Water
Associated Lab Samples: 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1.2J	5.0	1.0	07/11/18 11:50	

LABORATORY CONTROL SAMPLE & LCSD: 2987273 | 2987274

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	41.9	106	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987275 | 2987276

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	194	40	40	237	241	109	119	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987277 | 2987278

Parameter	Units	10437875004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	182	40	40	222	222	99	98	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 548341 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2980917 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/03/18 15:26	

LABORATORY CONTROL SAMPLE & LCSD: 2980918 2980919

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	500	480	476	96	95	80-120	1	10	

SAMPLE DUPLICATE: 2980920

Parameter	Units	10437867004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	245	251	2	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 114031 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 491415 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/03/18 16:33	

LABORATORY CONTROL SAMPLE: 491416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 491418

Parameter	Units	10437867002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.12	58	75-125	M1

MATRIX SPIKE SAMPLE: 491420

Parameter	Units	10437867003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.11	54	75-125	M1

SAMPLE DUPLICATE: 491417

Parameter	Units	10437867002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 491419

Parameter	Units	10437867003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 547969 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2979318 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	06/30/18 17:41	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	06/30/18 17:41	FS
Sulfate	mg/L	<0.19	1.2	0.19	06/30/18 17:41	FS

LABORATORY CONTROL SAMPLE: 2979319

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.1	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979321 2979322

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	13.2	13.2	96	96	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.94	0.94	94	94	90-110	0	20	
Sulfate	mg/L	3.2	12.5	12.5	15.8	15.8	100	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979323 2979324

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.7	12.5	12.5	26.1	26.1	84	84	90-110	0	20	M1
Nitrate as N	mg/L	3.8	1	1	4.4	4.4	58	59	90-110	0	20	M1
Sulfate	mg/L	13.1	12.5	12.5	24.6	24.6	92	93	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 549715 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2987471 | Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:25	

LABORATORY CONTROL SAMPLE: 2987472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.91	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987473 2987474

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.011	1	1	0.98	0.96	98	95	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987475 2987476

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.0	5	5	8.8	8.5	96	91	90-110	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 549425 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 2986224 Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/10/18 15:43	

LABORATORY CONTROL SAMPLE: 2986225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	308	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986226 2986227

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	261	275	100	106	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986228 2986229

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	262	265	104	105	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

QC Batch: 146772 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

METHOD BLANK: 580011 | Matrix: Water
Associated Lab Samples: 10437875001, 10437875002, 10437875003, 10437875004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/10/18 00:58	

LABORATORY CONTROL SAMPLE: 580012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580015 580016

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.93J	25	25	25.6	26.0	99	100	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580018 580019

Parameter	Units	10438034001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.4	25.7	100	101	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437875

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437875001	**062718-MW6U**	RSK 175	548415		
10437875002	**062718-MW6D**	RSK 175	548415		
10437875003	**062718-MW4D**	RSK 175	548415		
10437875004	**062718-FD01**	RSK 175	548415		
10437875001	**062718-MW6U**	EPA 3010	548020	EPA 6010D	549245
10437875002	**062718-MW6D**	EPA 3010	548020	EPA 6010D	549245
10437875003	**062718-MW4D**	EPA 3010	548020	EPA 6010D	549245
10437875004	**062718-FD01**	EPA 3010	548020	EPA 6010D	549245
10437875001	**062718-MW6U**	EPA 7470A	548031	EPA 7470A	549264
10437875002	**062718-MW6D**	EPA 7470A	548031	EPA 7470A	549264
10437875003	**062718-MW4D**	EPA 7470A	548031	EPA 7470A	549264
10437875004	**062718-FD01**	EPA 7470A	548031	EPA 7470A	549264
10437875001	**062718-MW6U**	SM 2320B	549643		
10437875002	**062718-MW6D**	SM 2320B	549643		
10437875003	**062718-MW4D**	SM 2320B	549643		
10437875004	**062718-FD01**	SM 2320B	549644		
10437875001	**062718-MW6U**	SM 2540C	548341		
10437875002	**062718-MW6D**	SM 2540C	548341		
10437875003	**062718-MW4D**	SM 2540C	548341		
10437875004	**062718-FD01**	SM 2540C	548341		
10437875001	**062718-MW6U**	SM 4500-S-2 D	114031		
10437875002	**062718-MW6D**	SM 4500-S-2 D	114031		
10437875003	**062718-MW4D**	SM 4500-S-2 D	114031		
10437875004	**062718-FD01**	SM 4500-S-2 D	114031		
10437875001	**062718-MW6U**	EPA 300.0	547969		
10437875002	**062718-MW6D**	EPA 300.0	547969		
10437875003	**062718-MW4D**	EPA 300.0	547969		
10437875004	**062718-FD01**	EPA 300.0	547969		
10437875001	**062718-MW6U**	EPA 353.2	549715		
10437875002	**062718-MW6D**	EPA 353.2	549715		
10437875003	**062718-MW4D**	EPA 353.2	549715		
10437875004	**062718-FD01**	EPA 353.2	549715		
10437875001	**062718-MW6U**	EPA 410.4	549425	EPA 410.4	549578
10437875002	**062718-MW6D**	EPA 410.4	549425	EPA 410.4	549578
10437875003	**062718-MW4D**	EPA 410.4	549425	EPA 410.4	549578
10437875004	**062718-FD01**	EPA 410.4	549425	EPA 410.4	549578
10437875001	**062718-MW6U**	SM 5310C	146772		
10437875002	**062718-MW6D**	SM 5310C	146772		
10437875003	**062718-MW4D**	SM 5310C	146772		
10437875004	**062718-FD01**	SM 5310C	146772		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	***10 Day Standard***

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

WO# : 10437875

10437875

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	062718-MW6U	WT	G	6/27	845	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		~~8~~	JE 24 hold	001
2	062718-MW6D	↓	↓	↓	945	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				002
3	062718-MW4D	↓	↓	↓	1045	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				003
4	062718-FD01	↓	↓	↓	950	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X			↓	004
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	Jacobs	6/29/18	1530	PACE	6/30/18	9:30	4.7 4.9	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jon Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 6/27/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR-CH2M 4,71

Project #: **WO#: 10437875**

PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7748103724 17, 2358

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.6, 4.8 **Cooler Temp Corrected (°C):** 4.7, 4.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** JM 6/30 KS

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☑ No ~~KS~~		MS Not Requested
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-4:3/1 1-4:1/1 1-4:2/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS: Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1340	Temp: 4.7, 4.9	Corrected Temp: 4.7, 4.9
Time: 1350	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compl his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#:12111470

12111470

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437875 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/30/2018 Results Requested By: 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	062718-MW6U	PS	6/27/2018 08:45	10437875001	Water	2	X	
2	062718-MW6D	PS	6/27/2018 09:45	10437875002	Water	2	X	
3	062718-MW4D	PS	6/27/2018 10:45	10437875003	Water	2	X	
4	062718-FD01	PS	6/27/2018 09:50	10437875004	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] /Pace	7/2/18 1240	B. Mathews	7/3/18 1040
2				
3				

Comments

Cooler Temperature on Receipt 1.8 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mpls

Project #:

WO# : 12111470

PM: HRZ **Due Date: 07/17/18**

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: Temp Blank? ☐ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5 Cooler Temp Corrected °C: 1.8 Biological Tissue Frozen? ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: BM 7/3/18

	Yes	No	N/A	Comments:
Chain of Custody Present?	☐	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☐	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑	☐	☐	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jean Date: 7/5/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

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Workorder: 10437875 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 6/30/2018 **Results Requested By:** 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis

WO#: 2079577

2079577

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	062718-MW6U	PS	6/27/2018 08:45	10437875001	Water		1	X	
2	062718-MW6D	PS	6/27/2018 09:45	10437875002	Water		1	X	
3	062718-MW4D	PS	6/27/2018 10:45	10437875003	Water		1	X	
4	062718-FD01	PS	6/27/2018 09:50	10437875004	Water		1	X	
5									

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/2/18 1230	Fed Ex	
2	Fed Ex	7/3/18 0925	[signature]	7/3/18 0925
3				

Comments

Cooler Temperature on Receipt 1.6 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon R Proj

WO#:2079577

PM: CMM Due Date: 07/18/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/3/18 CMM

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑ Yes ☐ No ☐ N/A	1
Chain of Custody Present:	☑ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☑ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☑ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes ☑ No ☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☑ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☑ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☑ N/A	9
Sample Labels match COC:	☑ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes ☐ No ☐ N/A	13 If No, was preserative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☑ N/A	14
Trip Blank Present:	☐ Yes ☑ No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 12, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437877

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437877001	**062818-MW9D**	Water	06/28/18 12:00	06/30/18 09:30
10437877002	**062818-MW9U**	Water	06/28/18 12:45	06/30/18 09:30
10437877003	**062818-MW14D**	Water	06/28/18 14:00	06/30/18 09:30
10437877004	**062818-MW5D**	Water	06/28/18 15:30	06/30/18 09:30
10437877005	**062818-MW20D**	Water	06/28/18 16:30	06/30/18 09:30
10437877006	**062818-MW17D**	Water	06/28/18 17:15	06/30/18 09:30
10437877007	**062818-MW19D**	Water	06/28/18 18:00	06/30/18 09:30
10437877008	**062818-MW15D**	Water	06/28/18 19:00	06/30/18 09:30
10437877009	**Trip Blank**	Water	06/28/18 00:00	06/30/18 09:30
10437877010	**062818-FD3**	Water	06/28/18 08:00	06/30/18 09:30
10437877011	**062818-FD4**	Water	06/28/18 08:05	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437877001	**062818-MW9D**	EPA 8260B	AEZ	83	PASI-M
10437877002	**062818-MW9U**	EPA 8260B	AEZ	83	PASI-M
10437877003	**062818-MW14D**	EPA 8260B	AEZ	83	PASI-M
10437877004	**062818-MW5D**	EPA 8260B	AEZ	83	PASI-M
10437877005	**062818-MW20D**	EPA 8260B	AEZ	83	PASI-M
10437877006	**062818-MW17D**	EPA 8260B	AEZ	83	PASI-M
10437877007	**062818-MW19D**	EPA 8260B	AEZ, DS2	83	PASI-M
10437877008	**062818-MW15D**	EPA 8260B	AEZ	83	PASI-M
10437877009	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M
10437877010	**062818-FD3**	EPA 8260B	AEZ	83	PASI-M
10437877011	**062818-FD4**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437877001	**062818-MW9D**					
EPA 8260B	Carbon disulfide	0.082J	ug/L	1.0	07/07/18 02:22	
EPA 8260B	Carbon tetrachloride	93.2	ug/L	0.50	07/07/18 02:22	
EPA 8260B	Chloroform	4.1	ug/L	1.0	07/07/18 02:22	
10437877002	**062818-MW9U**					
EPA 8260B	Carbon disulfide	0.54J	ug/L	1.0	07/09/18 12:31	
EPA 8260B	Carbon tetrachloride	584	ug/L	2.5	07/09/18 18:48	HS,M1
EPA 8260B	Chloroform	16.7	ug/L	1.0	07/09/18 12:31	
10437877003	**062818-MW14D**					
EPA 8260B	Acetone	10J	ug/L	20.0	07/09/18 12:55	
EPA 8260B	Carbon disulfide	0.15J	ug/L	1.0	07/09/18 12:55	
10437877004	**062818-MW5D**					
EPA 8260B	Carbon disulfide	0.082J	ug/L	1.0	07/09/18 13:42	
10437877005	**062818-MW20D**					
EPA 8260B	Carbon disulfide	0.091J	ug/L	1.0	07/09/18 14:05	
EPA 8260B	Carbon tetrachloride	27.7	ug/L	0.50	07/09/18 14:05	
EPA 8260B	Chloroform	1.1	ug/L	1.0	07/09/18 14:05	
10437877006	**062818-MW17D**					
EPA 8260B	Carbon disulfide	1.0	ug/L	1.0	07/09/18 14:52	
10437877007	**062818-MW19D**					
EPA 8260B	Carbon disulfide	0.44J	ug/L	1.0	07/09/18 19:35	
EPA 8260B	Carbon tetrachloride	443	ug/L	2.5	07/11/18 16:16	
EPA 8260B	Chloroform	20.9	ug/L	1.0	07/09/18 19:35	
10437877008	**062818-MW15D**					
EPA 8260B	Carbon disulfide	0.12J	ug/L	1.0	07/09/18 15:16	
EPA 8260B	Carbon tetrachloride	8.7	ug/L	0.50	07/09/18 15:16	
10437877009	**Trip Blank**					
EPA 8260B	Methylene Chloride	1.4J	ug/L	4.0	07/09/18 11:44	
10437877010	**062818-FD3**					
EPA 8260B	Carbon disulfide	0.28J	ug/L	1.0	07/09/18 15:40	
EPA 8260B	Carbon tetrachloride	94.8	ug/L	0.50	07/09/18 15:40	
EPA 8260B	Chloroform	4.1	ug/L	1.0	07/09/18 15:40	
10437877011	**062818-FD4**					
EPA 8260B	Carbon disulfide	0.66J	ug/L	1.0	07/09/18 16:03	
EPA 8260B	Carbon tetrachloride	606	ug/L	2.5	07/10/18 18:19	
EPA 8260B	Chloroform	16.5	ug/L	1.0	07/09/18 16:03	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
11 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548931

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437860001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2983991)
  - Carbon tetrachloride

QC Batch: 549215

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062818-MW9D (Lab ID: 10437877001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2983988)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2983989)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2983990)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2983991)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 549215

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2985595)
  - Carbon tetrachloride

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062818-FD3 (Lab ID: 10437877010)
  - Dichlorofluoromethane
- 062818-FD4 (Lab ID: 10437877011)
  - Dichlorofluoromethane
- 062818-MW14D (Lab ID: 10437877003)
  - Dichlorofluoromethane
- 062818-MW15D (Lab ID: 10437877008)
  - Dichlorofluoromethane
- 062818-MW17D (Lab ID: 10437877006)
  - Dichlorofluoromethane
- 062818-MW19D (Lab ID: 10437877007)
  - Dichlorofluoromethane
- 062818-MW20D (Lab ID: 10437877005)
  - Dichlorofluoromethane
- 062818-MW5D (Lab ID: 10437877004)
  - Dichlorofluoromethane
- 062818-MW9U (Lab ID: 10437877002)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

Analyte Comments:

QC Batch: 549215

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2985590)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2985596)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2985591)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCSD (Lab ID: 2985592)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2985595)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10437877009)
  - Dichlorofluoromethane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW9D **Lab ID: 10437877001** Collected: 06/28/18 12:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:22	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:22	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 02:22	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:22	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:22	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:22	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 02:22	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 02:22	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:22	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 02:22	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 02:22	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:22	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 02:22	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 02:22	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 02:22	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:22	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:22	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 02:22	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:22	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 02:22	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 02:22	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 02:22	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 02:22	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:22	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 02:22	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 02:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 02:22	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 02:22	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 02:22	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 02:22	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 02:22	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 02:22	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 02:22	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 02:22	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 02:22	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 02:22	74-83-9	
Carbon disulfide	**0.082J**	ug/L	1.0	0.078	1		07/07/18 02:22	75-15-0	
Carbon tetrachloride	**93.2**	ug/L	0.50	0.19	1		07/07/18 02:22	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:22	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 02:22	75-00-3	
Chloroform	**4.1**	ug/L	1.0	0.45	1		07/07/18 02:22	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 02:22	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:22	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW9D **Lab ID: 10437877001** Collected: 06/28/18 12:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 02:22	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 02:22	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 02:22	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 02:22	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:22	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 02:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:22	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:22	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 02:22	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 02:22	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 02:22	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:22	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 02:22	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 02:22	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 02:22	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 02:22	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 02:22	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 02:22	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 02:22	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:22	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:22	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 02:22	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 02:22	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 02:22	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:22	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:22	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:22	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 02:22	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 02:22	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:22	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:22	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:22	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 02:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 02:22	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/07/18 02:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		07/07/18 02:22	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW9U **Lab ID: 10437877002** Collected: 06/28/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:31	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:31	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:31	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:31	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 12:31	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:31	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:31	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:31	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:31	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 12:31	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:31	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:31	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 12:31	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:31	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:31	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:31	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:31	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:31	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:31	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:31	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 12:31	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:31	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 12:31	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 12:31	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 12:31	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 12:31	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:31	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 12:31	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 12:31	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 12:31	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 12:31	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:31	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 12:31	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:31	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:31	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:31	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:31	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 12:31	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 12:31	74-83-9	
Carbon disulfide	**0.54J**	ug/L	1.0	0.078	1		07/09/18 12:31	75-15-0	
Carbon tetrachloride	**584**	ug/L	2.5	0.94	5		07/09/18 18:48	56-23-5	HS,M1
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:31	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 12:31	75-00-3	
Chloroform	**16.7**	ug/L	1.0	0.45	1		07/09/18 12:31	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:31	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:31	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW9U **Lab ID: 10437877002** Collected: 06/28/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 12:31	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 12:31	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 12:31	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 12:31	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:31	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:31	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:31	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:31	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:31	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 12:31	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 12:31	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 12:31	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:31	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 12:31	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 12:31	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 12:31	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 12:31	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 12:31	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 12:31	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 12:31	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:31	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:31	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:31	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:31	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:31	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:31	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:31	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:31	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 12:31	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:31	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:31	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:31	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:31	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 12:31	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/09/18 12:31	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 12:31	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 12:31	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW14D **Lab ID: 10437877003** Collected: 06/28/18 14:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:55	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:55	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:55	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:55	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 12:55	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:55	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:55	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:55	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:55	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 12:55	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:55	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:55	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 12:55	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:55	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:55	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:55	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:55	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:55	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:55	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:55	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 12:55	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:55	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 12:55	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 12:55	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 12:55	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 12:55	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:55	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 12:55	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 12:55	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 12:55	108-10-1	
Acetone	**10J**	ug/L	20.0	9.2	1		07/09/18 12:55	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:55	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 12:55	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:55	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:55	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:55	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:55	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 12:55	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 12:55	74-83-9	
Carbon disulfide	**0.15J**	ug/L	1.0	0.078	1		07/09/18 12:55	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 12:55	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:55	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 12:55	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 12:55	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:55	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:55	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437877

Sample: 062818-MW14D **Lab ID: 10437877003** Collected: 06/28/18 14:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 12:55	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 12:55	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 12:55	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 12:55	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:55	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:55	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:55	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:55	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:55	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 12:55	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 12:55	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 12:55	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:55	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 12:55	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 12:55	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 12:55	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 12:55	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 12:55	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 12:55	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 12:55	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:55	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:55	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:55	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:55	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:55	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:55	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:55	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:55	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 12:55	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:55	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:55	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:55	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:55	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 12:55	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/09/18 12:55	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 12:55	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		07/09/18 12:55	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW5D **Lab ID: 10437877004** Collected: 06/28/18 15:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 13:42	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 13:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 13:42	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 13:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 13:42	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 13:42	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 13:42	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 13:42	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 13:42	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 13:42	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 13:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 13:42	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 13:42	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 13:42	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 13:42	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 13:42	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 13:42	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 13:42	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 13:42	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 13:42	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 13:42	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 13:42	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 13:42	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 13:42	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 13:42	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 13:42	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 13:42	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 13:42	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 13:42	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 13:42	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 13:42	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 13:42	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 13:42	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 13:42	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 13:42	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 13:42	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 13:42	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 13:42	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 13:42	74-83-9	
Carbon disulfide	**0.082J**	ug/L	1.0	0.078	1		07/09/18 13:42	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 13:42	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 13:42	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 13:42	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 13:42	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 13:42	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 13:42	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW5D **Lab ID: 10437877004** Collected: 06/28/18 15:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 13:42	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 13:42	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 13:42	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 13:42	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 13:42	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 13:42	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 13:42	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 13:42	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 13:42	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 13:42	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 13:42	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 13:42	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 13:42	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 13:42	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 13:42	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 13:42	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 13:42	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 13:42	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 13:42	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 13:42	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 13:42	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 13:42	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 13:42	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 13:42	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 13:42	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 13:42	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 13:42	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 13:42	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 13:42	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 13:42	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 13:42	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 13:42	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 13:42	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 13:42	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/09/18 13:42	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 13:42	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/09/18 13:42	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW20D **Lab ID: 10437877005** Collected: 06/28/18 16:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 14:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 14:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 14:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:05	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 14:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 14:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 14:05	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 14:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 14:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 14:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 14:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 14:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 14:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 14:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 14:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 14:05	74-83-9	
Carbon disulfide	**0.091J**	ug/L	1.0	0.078	1		07/09/18 14:05	75-15-0	
Carbon tetrachloride	**27.7**	ug/L	0.50	0.19	1		07/09/18 14:05	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 14:05	75-00-3	
Chloroform	**1.1**	ug/L	1.0	0.45	1		07/09/18 14:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW20D **Lab ID: 10437877005** Collected: 06/28/18 16:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 14:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 14:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 14:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 14:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 14:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 14:05	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 14:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 14:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 14:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 14:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 14:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 14:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 14:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 14:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:05	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 14:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 14:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/09/18 14:05	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/09/18 14:05	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 14:05	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW17D **Lab ID: 10437877006** Collected: 06/28/18 17:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:52	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:52	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 14:52	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:52	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:52	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:52	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 14:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 14:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:52	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:52	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:52	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:52	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 14:52	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 14:52	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 14:52	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 14:52	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 14:52	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:52	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 14:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 14:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 14:52	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 14:52	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:52	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 14:52	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:52	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:52	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:52	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:52	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 14:52	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 14:52	74-83-9	
Carbon disulfide	**1.0**	ug/L	1.0	0.078	1		07/09/18 14:52	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 14:52	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:52	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 14:52	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 14:52	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:52	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:52	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW17D **Lab ID: 10437877006** Collected: 06/28/18 17:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 14:52	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 14:52	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 14:52	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 14:52	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:52	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:52	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 14:52	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 14:52	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 14:52	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:52	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 14:52	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 14:52	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 14:52	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 14:52	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 14:52	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 14:52	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 14:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:52	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:52	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:52	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:52	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:52	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:52	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:52	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:52	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 14:52	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:52	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:52	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 14:52	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/09/18 14:52	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 14:52	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 14:52	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW19D **Lab ID: 10437877007** Collected: 06/28/18 18:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 19:35	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 19:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 19:35	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 19:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 19:35	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 19:35	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 19:35	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 19:35	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 19:35	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 19:35	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 19:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 19:35	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 19:35	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 19:35	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 19:35	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 19:35	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 19:35	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 19:35	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 19:35	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 19:35	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 19:35	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 19:35	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 19:35	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 19:35	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 19:35	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 19:35	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 19:35	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 19:35	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 19:35	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 19:35	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 19:35	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 19:35	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 19:35	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 19:35	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 19:35	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 19:35	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 19:35	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 19:35	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 19:35	74-83-9	
Carbon disulfide	**0.44J**	ug/L	1.0	0.078	1		07/09/18 19:35	75-15-0	
Carbon tetrachloride	**443**	ug/L	2.5	0.94	5		07/11/18 16:16	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 19:35	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 19:35	75-00-3	
Chloroform	**20.9**	ug/L	1.0	0.45	1		07/09/18 19:35	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 19:35	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 19:35	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW19D **Lab ID: 10437877007** Collected: 06/28/18 18:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 19:35	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 19:35	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 19:35	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 19:35	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 19:35	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 19:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 19:35	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 19:35	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 19:35	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 19:35	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 19:35	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 19:35	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 19:35	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 19:35	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 19:35	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 19:35	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 19:35	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 19:35	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 19:35	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 19:35	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 19:35	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 19:35	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 19:35	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 19:35	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 19:35	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 19:35	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 19:35	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 19:35	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 19:35	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 19:35	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 19:35	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 19:35	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 19:35	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 19:35	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1		07/09/18 19:35	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 19:35	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 19:35	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW15D **Lab ID: 10437877008** Collected: 06/28/18 19:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:16	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:16	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 15:16	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:16	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:16	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:16	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 15:16	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 15:16	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:16	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 15:16	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 15:16	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:16	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 15:16	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 15:16	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 15:16	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:16	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:16	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 15:16	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:16	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 15:16	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 15:16	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 15:16	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 15:16	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:16	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 15:16	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 15:16	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 15:16	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 15:16	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 15:16	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 15:16	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 15:16	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 15:16	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 15:16	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 15:16	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 15:16	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 15:16	74-83-9	
Carbon disulfide	**0.12J**	ug/L	1.0	0.078	1		07/09/18 15:16	75-15-0	
Carbon tetrachloride	**8.7**	ug/L	0.50	0.19	1		07/09/18 15:16	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:16	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 15:16	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 15:16	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 15:16	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:16	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-MW15D **Lab ID: 10437877008** Collected: 06/28/18 19:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 15:16	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 15:16	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 15:16	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 15:16	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:16	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:16	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 15:16	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:16	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:16	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 15:16	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 15:16	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 15:16	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:16	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 15:16	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 15:16	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 15:16	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 15:16	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 15:16	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 15:16	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 15:16	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:16	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:16	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 15:16	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 15:16	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 15:16	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:16	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:16	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:16	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 15:16	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 15:16	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:16	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:16	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:16	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 15:16	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1		07/09/18 15:16	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/09/18 15:16	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/09/18 15:16	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: Trip Blank **Lab ID: 10437877009** Collected: 06/28/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 11:44	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 11:44	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 11:44	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 11:44	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 11:44	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 11:44	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 11:44	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 11:44	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 11:44	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 11:44	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 11:44	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 11:44	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 11:44	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 11:44	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 11:44	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 11:44	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 11:44	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 11:44	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 11:44	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 11:44	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 11:44	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 11:44	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 11:44	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 11:44	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 11:44	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 11:44	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 11:44	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 11:44	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 11:44	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 11:44	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 11:44	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 11:44	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 11:44	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 11:44	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 11:44	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 11:44	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 11:44	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 11:44	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 11:44	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 11:44	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 11:44	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 11:44	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 11:44	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 11:44	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 11:44	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 11:44	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: Trip Blank **Lab ID: 10437877009** Collected: 06/28/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 11:44	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 11:44	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 11:44	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 11:44	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 11:44	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 11:44	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 11:44	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 11:44	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 11:44	1634-04-4	
Methylene Chloride	**1.4J**	ug/L	4.0	0.98	1		07/09/18 11:44	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 11:44	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 11:44	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 11:44	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 11:44	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 11:44	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 11:44	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 11:44	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 11:44	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 11:44	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 11:44	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 11:44	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 11:44	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 11:44	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 11:44	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 11:44	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 11:44	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 11:44	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 11:44	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 11:44	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 11:44	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 11:44	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 11:44	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 11:44	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 11:44	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/09/18 11:44	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 11:44	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/09/18 11:44	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-FD3 **Lab ID: 10437877010** Collected: 06/28/18 08:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:40	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:40	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 15:40	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:40	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:40	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 15:40	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 15:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 15:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 15:40	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:40	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 15:40	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 15:40	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 15:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:40	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:40	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 15:40	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:40	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 15:40	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 15:40	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 15:40	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 15:40	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:40	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 15:40	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 15:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 15:40	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 15:40	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 15:40	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 15:40	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 15:40	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 15:40	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 15:40	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 15:40	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 15:40	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 15:40	74-83-9	
Carbon disulfide	**0.28J**	ug/L	1.0	0.078	1		07/09/18 15:40	75-15-0	
Carbon tetrachloride	**94.8**	ug/L	0.50	0.19	1		07/09/18 15:40	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:40	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 15:40	75-00-3	
Chloroform	**4.1**	ug/L	1.0	0.45	1		07/09/18 15:40	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 15:40	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:40	124-48-1	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-FD3 **Lab ID: 10437877010** Collected: 06/28/18 08:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 15:40	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 15:40	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 15:40	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 15:40	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:40	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 15:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 15:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:40	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:40	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 15:40	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 15:40	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 15:40	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 15:40	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 15:40	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 15:40	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 15:40	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 15:40	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 15:40	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 15:40	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 15:40	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:40	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 15:40	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 15:40	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 15:40	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 15:40	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 15:40	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:40	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:40	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 15:40	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 15:40	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 15:40	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 15:40	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 15:40	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 15:40	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1		07/09/18 15:40	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 15:40	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 15:40	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-FD4 **Lab ID: 10437877011** Collected: 06/28/18 08:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:03	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:03	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:03	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 16:03	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:03	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:03	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:03	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:03	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 16:03	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:03	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:03	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 16:03	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:03	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:03	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:03	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:03	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:03	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:03	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:03	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 16:03	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:03	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 16:03	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 16:03	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 16:03	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 16:03	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:03	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 16:03	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 16:03	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 16:03	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 16:03	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:03	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 16:03	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:03	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:03	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:03	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:03	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 16:03	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 16:03	74-83-9	
Carbon disulfide	**0.66J**	ug/L	1.0	0.078	1		07/09/18 16:03	75-15-0	
Carbon tetrachloride	**606**	ug/L	2.5	0.94	5		07/10/18 18:19	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:03	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 16:03	75-00-3	
Chloroform	**16.5**	ug/L	1.0	0.45	1		07/09/18 16:03	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:03	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:03	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Sample: 062818-FD4 **Lab ID: 10437877011** Collected: 06/28/18 08:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 16:03	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 16:03	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 16:03	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 16:03	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:03	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:03	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:03	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:03	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:03	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 16:03	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 16:03	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 16:03	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:03	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 16:03	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 16:03	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 16:03	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 16:03	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 16:03	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 16:03	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 16:03	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:03	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:03	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:03	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:03	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:03	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:03	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:03	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:03	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 16:03	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:03	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:03	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:03	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:03	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 16:03	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/09/18 16:03	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 16:03	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 16:03	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

QC Batch: 548931 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437877001

METHOD BLANK: 2983988 | Matrix: Water
Associated Lab Samples: 10437877001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 00:01	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 00:01	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 00:01	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 00:01	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 00:01	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 00:01	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 00:01	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 00:01	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 00:01	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 00:01	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 00:01	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 00:01	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 00:01	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 00:01	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 00:01	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 00:01	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 00:01	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/07/18 00:01	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 00:01	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

METHOD BLANK: 2983988 Matrix: Water
Associated Lab Samples: 10437877001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 00:01	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 00:01	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 00:01	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 00:01	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 00:01	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 00:01	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
Methylene Chloride	ug/L	1.2J	4.0	0.98	07/07/18 00:01	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 00:01	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 00:01	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 00:01	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 00:01	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 00:01	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 00:01	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 00:01	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 00:01	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 00:01	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 00:01	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 00:01	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/07/18 00:01	
4-Bromofluorobenzene (S)	%.	99	75-125		07/07/18 00:01	
Toluene-d8 (S)	%.	96	75-125		07/07/18 00:01	

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.7	104	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.6	98	72-130	
1,2,3-Trichloropropane	ug/L	20	20.9	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	41.2	82	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,2-Dichloroethane	ug/L	20	20.9	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.5	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.4	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.5	103	75-125	
1,3-Dichloropropane	ug/L	20	20.7	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	442	111	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.3	96	64-130	N2
2,2-Dichloropropane	ug/L	20	17.5	87	68-129	
2-Butanone (MEK)	ug/L	100	122	122	65-126	
2-Chlorotoluene	ug/L	20	18.9	95	75-125	
2-Hexanone	ug/L	100	102	102	75-134	
4-Chlorotoluene	ug/L	20	19.4	97	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	218	109	63-149	
Acrylonitrile	ug/L	200	227	113	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.5	97	75-125	
Bromochloromethane	ug/L	20	20.8	104	75-125	
Bromodichloromethane	ug/L	20	18.5	93	75-125	
Bromoform	ug/L	20	15.3	77	70-125	
Bromomethane	ug/L	20	18.5	92	30-145	
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	19.1	95	75-125	
Chlorobenzene	ug/L	20	19.8	99	75-125	
Chloroethane	ug/L	20	22.5	112	73-131	
Chloroform	ug/L	20	20.9	105	75-125	
Chloromethane	ug/L	20	20.6	103	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.3	102	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.9	90	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.6	88	75-125	
Dibromomethane	ug/L	20	20.0	100	75-125	
Dichlorodifluoromethane	ug/L	20	20.3	101	64-127	
Dichlorofluoromethane	ug/L	20	21.2	106	75-125	N2
Diisopropyl ether	ug/L	20	21.3	106	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.8	104	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.3	96	75-125	
m&p-Xylene	ug/L	40	39.9	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	20.5	103	72-125	
n-Butylbenzene	ug/L	20	20.1	100	75-125	
n-Propylbenzene	ug/L	20	19.7	98	75-125	
Naphthalene	ug/L	20	17.7	88	61-136	
o-Xylene	ug/L	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	20	19.5	98	75-125	
sec-Butylbenzene	ug/L	20	19.8	99	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.9	94	75-125	
tert-Butyl Alcohol	ug/L	200	215	107	75-125	
tert-Butylbenzene	ug/L	20	19.0	95	75-125	
Tetrachloroethene	ug/L	20	20.3	101	75-125	
Tetrahydrofuran	ug/L	200	201	101	64-150	
Toluene	ug/L	20	19.4	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	40.5	81	57-126	
Trichloroethene	ug/L	20	21.5	108	75-125	
Trichlorofluoromethane	ug/L	20	21.3	106	74-126	
Vinyl acetate	ug/L	20	18.2	91	72-129	
Vinyl chloride	ug/L	20	21.5	107	71-130	
Xylene (Total)	ug/L	60	59.5	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			95	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.3	19.3	92	97	75-125	5	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.3	22.2	106	111	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.6	20.9	98	104	75-125	6	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.5	20.2	98	101	75-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.7	23.9	114	120	75-136	5	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.7	21.6	103	108	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	22.1	23.4	110	117	75-127	6	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	22.0	104	110	75-129	6	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.4	21.5	102	107	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.5	20.4	98	102	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.7	19.6	93	98	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.2	20.2	96	101	71-125	5	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	39.5	41.3	79	83	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.1	21.3	100	106	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.5	20.3	98	102	75-125	4	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.8	21.0	99	105	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.4	43.6	104	109	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.4	21.5	102	108	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.6	20.6	98	103	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.6	20.7	98	104	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.6	98	103	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.6	20.7	98	104	74-125	5	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	422	430	105	108	67-128	2	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.8	21.2	99	106	65-150	7	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.9	18.3	90	92	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	105	114	105	114	59-125	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	18.6	19.7	93	99	73-126	6	30	
2-Hexanone	ug/L	<0.88	100	100	94.4	96.2	94	96	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.3	20.1	96	100	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	98.8	101	99	101	73-125	2	30	
Acetone	ug/L	<9.2	100	100	93.0	99.5	93	100	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	194	209	97	105	53-150	8	30	
Acrylonitrile	ug/L	<0.91	200	200	202	213	101	107	69-127	5	30	
Benzene	ug/L	<0.10	20	20	20.3	21.4	102	107	74-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	19.0	20.8	95	104	75-125	9	30	
Bromochloromethane	ug/L	<0.27	20	20	20.1	21.2	100	106	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.5	19.2	92	96	75-125	4	30	
Bromoform	ug/L	<0.80	20	20	14.6	15.6	73	78	68-125	6	30	
Bromomethane	ug/L	<1.8	20	20	19.1	21.0	95	105	37-149	9	30	
Carbon disulfide	ug/L	0.12J	20	20	17.8	18.9	88	94	66-139	6	30	
Carbon tetrachloride	ug/L	202	20	20	220	238	86	177	75-127	8	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.6	20.5	98	102	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.7	106	108	73-134	2	30	
Chloroform	ug/L	8.8	20	20	29.0	30.0	101	106	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	20.2	20.4	101	102	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.4	21.4	102	107	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.7	18.0	84	90	71-125	7	30	
Dibromochloromethane	ug/L	<0.12	20	20	17.3	18.3	86	92	75-125	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.2	21.8	106	109	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.0	21.3	105	106	75-126	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	20.7	21.7	104	108	66-131	4	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.7	20.0	94	100	74-125	7	30	
Ethylbenzene	ug/L	<0.14	20	20	19.9	20.6	99	103	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20.9	21.9	104	110	60-150	5	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.1	20.8	101	104	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	39.9	41.6	100	104	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.2	20.1	96	100	75-125	5	30	
Methylene Chloride	ug/L	<0.98	20	20	19.0	20.0	95	100	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	20.3	22.0	102	110	73-140	8	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.4	20.7	97	104	75-126	7	30	
Naphthalene	ug/L	<0.48	20	20	18.7	19.9	93	99	61-136	6	30	
o-Xylene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-125	5	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.2	20.6	96	103	73-133	7	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.6	21.1	98	106	75-132	7	30	
Styrene	ug/L	<0.19	20	20	18.7	19.7	94	99	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.8	18.7	89	94	71-125	5	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	219	107	109	72-130	2	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.1	20.2	96	101	75-126	5	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	21.7	105	109	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	181	189	90	94	75-150	5	30	
Toluene	ug/L	<0.083	20	20	19.3	20.0	97	100	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.1	22.2	105	111	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.3	19.2	91	96	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	38.6	41.3	77	82	57-125	7	30	
Trichloroethene	ug/L	<0.15	20	20	20.5	21.4	102	107	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.2	21.6	106	108	75-135	2	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.7	89	94	57-136	5	30	
Vinyl chloride	ug/L	<0.092	20	20	22.1	22.7	110	113	74-141	3	30	
Xylene (Total)	ug/L	<0.31	60	60	59.6	62.4	99	104	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.						105	105	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

QC Batch: 549215 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437877002, 10437877003, 10437877004, 10437877005, 10437877006, 10437877007, 10437877008, 10437877009, 10437877010, 10437877011

METHOD BLANK: 2985590 | Matrix: Water
Associated Lab Samples: 10437877002, 10437877003, 10437877004, 10437877005, 10437877006, 10437877007, 10437877008, 10437877009, 10437877010, 10437877011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/09/18 11:21	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/09/18 11:21	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/09/18 11:21	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/09/18 11:21	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/09/18 11:21	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/09/18 11:21	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/09/18 11:21	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/09/18 11:21	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/09/18 11:21	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/09/18 11:21	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/09/18 11:21	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/09/18 11:21	
Acetone	ug/L	<9.2	20.0	9.2	07/09/18 11:21	
Acrolein	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/09/18 11:21	
Benzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/09/18 11:21	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
Bromoform	ug/L	<0.80	4.0	0.80	07/09/18 11:21	
Bromomethane	ug/L	<1.8	4.0	1.8	07/09/18 11:21	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/09/18 11:21	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

METHOD BLANK: 2985590 Matrix: Water

Associated Lab Samples: 10437877002, 10437877003, 10437877004, 10437877005, 10437877006, 10437877007, 10437877008, 10437877009, 10437877010, 10437877011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/09/18 11:21	
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Chloroethane	ug/L	<0.49	1.0	0.49	07/09/18 11:21	
Chloroform	ug/L	<0.45	1.0	0.45	07/09/18 11:21	
Chloromethane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/09/18 11:21	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/09/18 11:21	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/09/18 11:21	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/09/18 11:21	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/09/18 11:21	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Naphthalene	ug/L	<0.48	1.0	0.48	07/09/18 11:21	
o-Xylene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Styrene	ug/L	<0.19	0.50	0.19	07/09/18 11:21	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/09/18 11:21	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/09/18 11:21	
Toluene	ug/L	<0.083	0.50	0.083	07/09/18 11:21	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/09/18 11:21	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/09/18 11:21	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/09/18 11:21	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/09/18 11:21	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/09/18 11:21	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/09/18 11:21	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/09/18 11:21	
4-Bromofluorobenzene (S)	%.	97	75-125		07/09/18 11:21	
Toluene-d8 (S)	%.	98	75-125		07/09/18 11:21	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	19.3	105	97	75-125	8	30	
1,1,1-Trichloroethane	ug/L	20	21.4	20.3	107	102	75-125	5	30	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	20.7	106	103	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	20.5	20.6	102	103	75-125	1	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	21.2	113	106	72-125	6	30	
1,1-Dichloroethane	ug/L	20	22.1	20.7	110	103	75-125	7	30	
1,1-Dichloroethene	ug/L	20	21.3	21.1	107	105	73-125	1	30	
1,1-Dichloropropene	ug/L	20	21.0	20.0	105	100	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	20.0	21.7	100	109	72-130	8	30	
1,2,3-Trichloropropane	ug/L	20	21.0	21.0	105	105	75-125	0	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	20.5	94	103	75-125	8	30	
1,2,4-Trimethylbenzene	ug/L	20	19.3	18.6	96	93	75-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	45.7	91	91	64-133	1	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	20.9	109	105	75-125	4	30	
1,2-Dichlorobenzene	ug/L	20	19.8	19.3	99	97	75-125	2	30	
1,2-Dichloroethane	ug/L	20	21.3	20.6	107	103	75-125	4	30	
1,2-Dichloroethene (Total)	ug/L	40	42.6	40.8	107	102	75-125	4	30	N2
1,2-Dichloropropane	ug/L	20	21.4	20.5	107	102	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	20	19.3	19.1	96	96	75-125	1	30	
1,3-Dichlorobenzene	ug/L	20	20.6	19.9	103	100	75-125	3	30	
1,3-Dichloropropane	ug/L	20	21.0	20.5	105	103	75-125	2	30	
1,4-Dichlorobenzene	ug/L	20	20.4	19.7	102	99	75-125	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	467	440	117	110	75-125	6	30	
2,2,4-Trimethylpentane	ug/L	20	21.9	22.8	110	114	64-130	4	30	N2
2,2-Dichloropropane	ug/L	20	20.3	19.0	102	95	68-129	6	30	
2-Butanone (MEK)	ug/L	100	125	118	125	118	65-126	6	30	
2-Chlorotoluene	ug/L	20	18.9	17.5	94	88	75-125	7	30	
2-Hexanone	ug/L	100	103	99.4	103	99	75-134	4	30	
4-Chlorotoluene	ug/L	20	19.7	18.7	99	94	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	104	109	104	75-131	4	30	
Acetone	ug/L	100	108	106	108	106	68-150	2	30	
Acrolein	ug/L	200	226	215	113	108	63-149	5	30	
Acrylonitrile	ug/L	200	236	231	118	116	75-125	2	30	
Benzene	ug/L	20	21.5	20.6	107	103	75-125	4	30	
Bromobenzene	ug/L	20	19.7	19.1	98	96	75-125	3	30	
Bromochloromethane	ug/L	20	21.9	21.1	109	105	75-125	4	30	
Bromodichloromethane	ug/L	20	21.1	20.2	105	101	75-125	4	30	
Bromoform	ug/L	20	18.8	18.2	94	91	70-125	3	30	
Bromomethane	ug/L	20	12.7	12.6	63	63	30-145	1	30	
Carbon disulfide	ug/L	20	19.5	19.0	98	95	67-125	3	30	
Carbon tetrachloride	ug/L	20	21.1	19.7	106	98	75-125	7	30	
Chlorobenzene	ug/L	20	20.3	19.3	102	96	75-125	5	30	
Chloroethane	ug/L	20	22.5	21.9	113	110	73-131	3	30	
Chloroform	ug/L	20	21.7	20.5	109	102	75-125	6	30	
Chloromethane	ug/L	20	17.2	16.5	86	82	52-132	4	30	
cis-1,2-Dichloroethene	ug/L	20	21.2	20.2	106	101	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	20	20.1	18.9	100	94	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	20.5	19.6	103	98	75-125	5	30	
Dibromomethane	ug/L	20	21.2	20.6	106	103	75-125	3	30	
Dichlorodifluoromethane	ug/L	20	20.6	20.2	103	101	64-127	2	30	
Dichlorofluoromethane	ug/L	20	21.3	20.7	107	103	75-125	3	30	N2
Diisopropyl ether	ug/L	20	22.2	21.1	111	106	75-125	5	30	
Ethyl-tert-butyl ether	ug/L	20	20.2	19.6	101	98	75-125	3	30	
Ethylbenzene	ug/L	20	20.5	19.1	103	95	75-125	7	30	
Hexachloro-1,3-butadiene	ug/L	20	21.5	24.1	108	120	75-130	11	30	
Isopropylbenzene (Cumene)	ug/L	20	20.3	18.6	102	93	75-125	9	30	
m&p-Xylene	ug/L	40	41.4	38.4	104	96	75-125	8	30	
Methyl-tert-butyl ether	ug/L	20	20.1	19.4	101	97	75-125	4	30	
Methylene Chloride	ug/L	20	21.1	20.4	105	102	72-125	3	30	
n-Butylbenzene	ug/L	20	20.7	21.1	104	105	75-125	2	30	
n-Propylbenzene	ug/L	20	19.8	18.6	99	93	75-125	6	30	
Naphthalene	ug/L	20	17.7	18.3	88	91	61-136	3	30	
o-Xylene	ug/L	20	19.5	18.8	98	94	75-125	4	30	
p-Isopropyltoluene	ug/L	20	19.2	19.5	96	98	75-125	2	30	
sec-Butylbenzene	ug/L	20	19.8	19.5	99	97	75-125	2	30	
Styrene	ug/L	20	20.3	19.1	101	96	75-125	6	30	
tert-Amylmethyl ether	ug/L	20	18.8	18.0	94	90	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	246	232	123	116	75-125	6	30	
tert-Butylbenzene	ug/L	20	18.8	18.4	94	92	75-125	2	30	
Tetrachloroethene	ug/L	20	21.0	19.8	105	99	75-125	6	30	
Tetrahydrofuran	ug/L	200	201	195	100	97	64-150	3	30	
Toluene	ug/L	20	20.1	19.0	101	95	75-125	6	30	
trans-1,2-Dichloroethene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	20	21.0	20.2	105	101	75-125	4	30	
trans-1,4-Dichloro-2-butene	ug/L	50.2	46.3	46.1	92	92	57-126	0	30	
Trichloroethene	ug/L	20	21.8	20.5	109	102	75-125	6	30	
Trichlorofluoromethane	ug/L	20	21.3	20.3	106	102	74-126	5	30	
Vinyl acetate	ug/L	20	21.0	20.4	105	102	72-129	3	30	
Vinyl chloride	ug/L	20	21.3	20.7	107	104	71-130	3	30	
Xylene (Total)	ug/L	60	60.9	57.1	102	95	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.				103	104	75-125			
4-Bromofluorobenzene (S)	%.				94	96	75-125			
Toluene-d8 (S)	%.				97	99	75-125			

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.2	91	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	20.9	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.4	97	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.4	112	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	20.3	101	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	21.8	109	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.7	103	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	19.0	95	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.6	93	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	17.7	88	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.4	87	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.2	101	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	17.8	89	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	19.6	98	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40.4	101	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	19.7	98	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.0	90	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	18.6	93	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	19.2	96	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	18.4	92	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	411	103	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	21.8	109	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	19.5	97	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	114	114	59-125	
2-Chlorotoluene	ug/L	<0.16	20	17.0	85	73-126	
2-Hexanone	ug/L	<0.88	100	96.3	96	68-138	
4-Chlorotoluene	ug/L	<0.13	20	17.7	89	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	93.9	94	75-150	
Acrolein	ug/L	<1.2	200	208	104	53-150	
Acrylonitrile	ug/L	<0.91	200	209	104	69-127	
Benzene	ug/L	<0.10	20	20.2	101	74-125	
Bromobenzene	ug/L	<0.21	20	18.2	91	75-125	
Bromochloromethane	ug/L	<0.27	20	20.0	100	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.4	97	75-125	
Bromoform	ug/L	<0.80	20	16.9	84	68-125	
Bromomethane	ug/L	<1.8	20	13.2	66	37-149	
Carbon disulfide	ug/L	0.54J	20	19.5	95	66-139	
Carbon tetrachloride	ug/L	584	20	680	483	75-127	E,M1
Chlorobenzene	ug/L	<0.17	20	18.6	93	75-125	
Chloroethane	ug/L	<0.49	20	20.5	103	73-134	
Chloroform	ug/L	16.7	20	35.8	95	71-125	
Chloromethane	ug/L	<0.16	20	14.8	74	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	17.9	89	71-125	
Dibromochloromethane	ug/L	<0.12	20	19.1	95	75-125	
Dibromomethane	ug/L	<0.16	20	19.9	100	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	19.5	98	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	19.2	96	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	20.2	101	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	18.3	91	74-125	
Ethylbenzene	ug/L	<0.14	20	18.5	93	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	22.5	112	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.5	92	75-125	
m&p-Xylene	ug/L	<0.31	40	37.1	93	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	18.9	95	75-125	
Methylene Chloride	ug/L	<0.98	20	18.3	91	72-125	
n-Butylbenzene	ug/L	<0.24	20	20.1	101	73-140	
n-Propylbenzene	ug/L	<0.10	20	17.9	89	75-126	
Naphthalene	ug/L	<0.48	20	17.5	87	61-136	
o-Xylene	ug/L	<0.16	20	18.6	93	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.5	87	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.4	92	75-132	
Styrene	ug/L	<0.19	20	18.5	92	71-125	
tert-Amylmethyl ether	ug/L	<0.11	20	17.5	88	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	217	109	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.6	88	75-126	
Tetrachloroethene	ug/L	<0.17	20	20.2	101	75-125	
Tetrahydrofuran	ug/L	<2.2	200	178	89	75-150	
Toluene	ug/L	<0.083	20	18.7	93	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20.5	102	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	19.0	95	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	42.5	85	57-125	
Trichloroethene	ug/L	<0.15	20	20.3	101	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	19.5	98	75-135	
Vinyl acetate	ug/L	<1.1	20	21.1	105	57-136	
Vinyl chloride	ug/L	<0.092	20	20.2	101	74-141	
Xylene (Total)	ug/L	<0.31	60	55.7	93	75-125	
1,2-Dichloroethane-d4 (S)	%.				108	75-125	
4-Bromofluorobenzene (S)	%.				94	75-125	
Toluene-d8 (S)	%.				96	75-125	

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	10J	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	0.15J	0.15J		30	
Carbon tetrachloride	ug/L	<0.19	<0.19		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	108	2		
4-Bromofluorobenzene (S)	%.	95	96	1		
Toluene-d8 (S)	%.	97	97	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 549215

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437877

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437877001	**062818-MW9D**	EPA 8260B	548931		
10437877002	**062818-MW9U**	EPA 8260B	549215		
10437877003	**062818-MW14D**	EPA 8260B	549215		
10437877004	**062818-MW5D**	EPA 8260B	549215		
10437877005	**062818-MW20D**	EPA 8260B	549215		
10437877006	**062818-MW17D**	EPA 8260B	549215		
10437877007	**062818-MW19D**	EPA 8260B	549215		
10437877008	**062818-MW15D**	EPA 8260B	549215		
10437877009	**Trip Blank**	EPA 8260B	549215		
10437877010	**062818-FD3**	EPA 8260B	549215		
10437877011	**062818-FD4**	EPA 8260B	549215		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

WO#: 10437877

10437877

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	Lab ID
1	062818-MW9D	WT	G	6/28	1200	—	—	—	3				X				X											001
2	062818-MW9u	↓	↓	↓	1245	↓	↓	↓	3				X				X											002
3	062818-MW14D	↓	↓	↓	1400	↓	↓	↓	3				X				X											003
4	062818-MW5D	↓	↓	↓	1530	↓	↓	↓	3				X				X											004
5	062818-MW20D	↓	↓	↓	1630	↓	↓	↓	3				X				X											005
6	062818-MW17D	↓	↓	↓	1715	↓	↓	↓	3				X				X											006
7	062818-MW19D	↓	↓	↓	1800	↓	↓	↓	3				X				X											007
8	062818-MW15D	↓	↓	↓	1900	↓	↓	↓	3				X				X											008
9	Trip Blank	WT	—	—	—	—	—	—	2				X				X											009
10	062818-FD3	↓	G	6/28	800	—	—	—	3				X				X											010
11	062818-FD4	↓	↓	↓	805	—	—	—	3				X				X											011
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	4.9	Y	Y	Y
*Field filtered by client							3.3			
							3.1			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/28/18

SAMPLE CONDITIONS

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #:

WO# : 10437877

PM: JMG **Due Date:** 07/10/18

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2356, 2347, 2370

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.8, 3.2, 3.0 **Cooler Temp Corrected (°C):** 4.9, 3.3, 3.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/30/18 LJ

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	JMG 070218	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No	JMG 070218	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. See exception ~~sheet~~
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 1635261509 SL				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1410	Temp: see above	Corrected Temp: see above
Time: 1430	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 070218

Note: Whenever there is a discrepancy affecting North Carolina complia[nce … t]his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062818-MW9D	0	1	2	3
" -MW9U	2	1	0	3
" -MW14D	0	1	2	3
~~" -MW20D~~	~~2~~	~~0~~	~~1~~	~~3~~
062818-MW5D	2	0	1	3
" -MW17D	0	1	2	3
" -MW15D	1	1	1	3
" ~~MW~~ FD3	0	3	0	3
" FD4	0	1	2	3
TB	0	2	2	4

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 13, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437878

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437878001	**062818-MW9D**	Water	06/28/18 12:00	06/30/18 09:30
10437878002	**062818-MW9U**	Water	06/28/18 12:45	06/30/18 09:30
10437878003	**062818-MW14D**	Water	06/28/18 14:00	06/30/18 09:30
10437878004	**062818-MW5D**	Water	06/28/18 15:30	06/30/18 09:30
10437878005	**062818-MW20D**	Water	06/28/18 16:30	06/30/18 09:30
10437878006	**062818-MW17D**	Water	06/28/18 17:15	06/30/18 09:30
10437878007	**062818-MW19D**	Water	06/28/18 18:00	06/30/18 09:30
10437878008	**062818-MW15D**	Water	06/28/18 19:00	06/30/18 09:30
10437878009	**062818-FD3**	Water	06/28/18 08:00	06/30/18 09:30
10437878010	**062818-FD4**	Water	06/28/18 08:05	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437878001	**062818-MW9D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878002	**062818-MW9U**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878003	**062818-MW14D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878004	**062818-MW5D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878005	**062818-MW20D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878006	**062818-MW17D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878007	**062818-MW19D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878008	**062818-MW15D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878009	**062818-FD3**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437878010	**062818-FD4**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

Pace Analytical
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437878001	**062818-MW9D**					
EPA 6010D	Barium, Dissolved	27.0	ug/L	10.0	07/03/18 10:15	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/03/18 10:15	
EPA 6010D	Cadmium, Dissolved	0.27J	ug/L	3.0	07/03/18 10:15	
EPA 6010D	Calcium, Dissolved	52100	ug/L	500	07/03/18 10:15	
EPA 6010D	Cobalt, Dissolved	0.78J	ug/L	10.0	07/03/18 10:15	
EPA 6010D	Copper, Dissolved	1.4J	ug/L	10.0	07/03/18 10:15	
EPA 6010D	Iron, Dissolved	6.1J	ug/L	50.0	07/03/18 10:15	
EPA 6010D	Magnesium, Dissolved	15000	ug/L	500	07/03/18 10:15	
EPA 6010D	Manganese, Dissolved	1.7J	ug/L	5.0	07/03/18 10:15	
EPA 6010D	Potassium, Dissolved	2130J	ug/L	2500	07/03/18 10:15	
EPA 6010D	Sodium, Dissolved	13100	ug/L	1000	07/03/18 10:15	
EPA 6010D	Vanadium, Dissolved	7.4J	ug/L	15.0	07/03/18 10:15	
EPA 6010D	Zinc, Dissolved	3.3J	ug/L	20.0	07/03/18 10:15	
SM 2320B	Alkalinity, Total as CaCO3	164	mg/L	5.0	07/12/18 08:32	
SM 2540C	Total Dissolved Solids	272	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	10.7	mg/L	1.2	06/30/18 23:42	
EPA 300.0	Nitrate as N	4.3	mg/L	0.10	06/30/18 23:42	H1
EPA 300.0	Sulfate	33.9	mg/L	1.2	06/30/18 23:42	
EPA 353.2	Nitrogen, NO2 plus NO3	2.1	mg/L	0.50	07/11/18 13:11	
SM 5310C	Total Organic Carbon	0.99J	mg/L	1.0	07/10/18 01:32	
10437878002	**062818-MW9U**					
EPA 6010D	Aluminum, Dissolved	23.0J	ug/L	200	07/03/18 10:17	
EPA 6010D	Barium, Dissolved	20.7	ug/L	10.0	07/03/18 10:17	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	07/03/18 10:17	
EPA 6010D	Calcium, Dissolved	52500	ug/L	500	07/03/18 10:17	
EPA 6010D	Cobalt, Dissolved	0.92J	ug/L	10.0	07/03/18 10:17	
EPA 6010D	Iron, Dissolved	44.0J	ug/L	50.0	07/03/18 10:17	
EPA 6010D	Magnesium, Dissolved	14500	ug/L	500	07/03/18 10:17	
EPA 6010D	Manganese, Dissolved	5.7	ug/L	5.0	07/03/18 10:17	
EPA 6010D	Nickel, Dissolved	11.6J	ug/L	20.0	07/03/18 10:17	
EPA 6010D	Potassium, Dissolved	1840J	ug/L	2500	07/03/18 10:17	
EPA 6010D	Sodium, Dissolved	13900	ug/L	1000	07/03/18 10:17	
EPA 6010D	Vanadium, Dissolved	7.2J	ug/L	15.0	07/03/18 10:17	
EPA 6010D	Zinc, Dissolved	3.0J	ug/L	20.0	07/03/18 10:17	
SM 2320B	Alkalinity, Total as CaCO3	156	mg/L	5.0	07/12/18 08:47	
SM 2540C	Total Dissolved Solids	276	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	11.4	mg/L	1.2	07/01/18 00:27	FS
EPA 300.0	Nitrate as N	5.7	mg/L	0.10	07/01/18 00:27	FS,H1
EPA 300.0	Sulfate	32.9	mg/L	1.2	07/01/18 00:27	FS
EPA 353.2	Nitrogen, NO2 plus NO3	5.6	mg/L	0.50	07/11/18 13:34	
SM 5310C	Total Organic Carbon	1.8	mg/L	1.0	07/10/18 01:48	
10437878003	**062818-MW14D**					
EPA 6010D	Aluminum, Dissolved	68.4J	ug/L	200	07/03/18 10:19	
EPA 6010D	Arsenic, Dissolved	5.4J	ug/L	20.0	07/03/18 10:19	
EPA 6010D	Barium, Dissolved	34.0	ug/L	10.0	07/03/18 10:19	
EPA 6010D	Calcium, Dissolved	27900	ug/L	500	07/03/18 10:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437878003	**062818-MW14D**					
EPA 6010D	Cobalt, Dissolved	2.6J	ug/L	10.0	07/03/18 10:19	
EPA 6010D	Iron, Dissolved	526	ug/L	50.0	07/03/18 10:19	
EPA 6010D	Magnesium, Dissolved	8530	ug/L	500	07/03/18 10:19	
EPA 6010D	Manganese, Dissolved	774	ug/L	5.0	07/03/18 10:19	
EPA 6010D	Sodium, Dissolved	27600	ug/L	1000	07/03/18 10:19	
EPA 6010D	Vanadium, Dissolved	4.6J	ug/L	15.0	07/03/18 10:19	
EPA 6010D	Zinc, Dissolved	4.8J	ug/L	20.0	07/03/18 10:19	
SM 2320B	Alkalinity, Total as CaCO3	164	mg/L	5.0	07/12/18 08:50	
SM 2540C	Total Dissolved Solids	216	mg/L	10.0	07/05/18 12:37	
EPA 300.0	Chloride	1.9	mg/L	1.2	07/01/18 00:43	
EPA 300.0	Nitrate as N	0.055J	mg/L	0.10	07/01/18 00:43	H1
EPA 300.0	Sulfate	4.5	mg/L	1.2	07/01/18 00:43	
EPA 353.2	Nitrogen, NO2 plus NO3	0.040J	mg/L	0.10	07/11/18 12:16	
SM 5310C	Total Organic Carbon	4.9	mg/L	1.0	07/10/18 02:05	
10437878004	**062818-MW5D**					
RSK 175	Methane	7.1J	ug/L	10.0	07/05/18 10:58	
EPA 6010D	Aluminum, Dissolved	104J	ug/L	200	07/03/18 10:20	
EPA 6010D	Barium, Dissolved	96.4	ug/L	10.0	07/03/18 10:20	
EPA 6010D	Calcium, Dissolved	48500	ug/L	500	07/03/18 10:20	
EPA 6010D	Cobalt, Dissolved	0.81J	ug/L	10.0	07/03/18 10:20	
EPA 6010D	Iron, Dissolved	83.0	ug/L	50.0	07/03/18 10:20	
EPA 6010D	Magnesium, Dissolved	14700	ug/L	500	07/03/18 10:20	
EPA 6010D	Manganese, Dissolved	12.4	ug/L	5.0	07/03/18 10:20	
EPA 6010D	Potassium, Dissolved	1460J	ug/L	2500	07/03/18 10:20	
EPA 6010D	Sodium, Dissolved	17100	ug/L	1000	07/03/18 10:20	
EPA 6010D	Vanadium, Dissolved	6.7J	ug/L	15.0	07/03/18 10:20	
EPA 6010D	Zinc, Dissolved	3.6J	ug/L	20.0	07/03/18 10:20	
SM 2320B	Alkalinity, Total as CaCO3	220	mg/L	5.0	07/12/18 08:54	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	07/05/18 12:37	
EPA 300.0	Chloride	1.1J	mg/L	1.2	07/01/18 00:58	
EPA 300.0	Nitrate as N	0.18	mg/L	0.10	07/01/18 00:58	H1
EPA 300.0	Sulfate	1.8	mg/L	1.2	07/01/18 00:58	
EPA 353.2	Nitrogen, NO2 plus NO3	0.23	mg/L	0.10	07/11/18 12:17	
SM 5310C	Total Organic Carbon	0.86J	mg/L	1.0	07/10/18 02:21	
10437878005	**062818-MW20D**					
EPA 6010D	Barium, Dissolved	21.1	ug/L	10.0	07/03/18 10:22	
EPA 6010D	Calcium, Dissolved	57000	ug/L	500	07/03/18 10:22	
EPA 6010D	Chromium, Dissolved	0.50J	ug/L	10.0	07/03/18 10:22	
EPA 6010D	Cobalt, Dissolved	0.75J	ug/L	10.0	07/03/18 10:22	
EPA 6010D	Iron, Dissolved	10.3J	ug/L	50.0	07/03/18 10:22	
EPA 6010D	Magnesium, Dissolved	22300	ug/L	500	07/03/18 10:22	
EPA 6010D	Manganese, Dissolved	7.6	ug/L	5.0	07/03/18 10:22	
EPA 6010D	Nickel, Dissolved	1.1J	ug/L	20.0	07/03/18 10:22	
EPA 6010D	Potassium, Dissolved	3820	ug/L	2500	07/03/18 10:22	
EPA 6010D	Sodium, Dissolved	19500	ug/L	1000	07/03/18 10:22	
EPA 6010D	Vanadium, Dissolved	5.0J	ug/L	15.0	07/03/18 10:22	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437878005	**062818-MW20D**					
EPA 6010D	Zinc, Dissolved	3.4J	ug/L	20.0	07/03/18 10:22	
SM 2320B	Alkalinity, Total as CaCO3	261	mg/L	5.0	07/12/18 08:58	
SM 2540C	Total Dissolved Solids	322	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	5.5	mg/L	1.2	07/01/18 01:13	FS
EPA 300.0	Nitrate as N	1.1	mg/L	0.10	07/01/18 01:13	FS,H1
EPA 300.0	Sulfate	8.1	mg/L	1.2	07/01/18 01:13	FS
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	07/11/18 12:19	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	07/10/18 02:38	
10437878006	**062818-MW17D**					
EPA 6010D	Barium, Dissolved	80.8	ug/L	10.0	07/03/18 10:23	
EPA 6010D	Calcium, Dissolved	43200	ug/L	500	07/03/18 10:23	
EPA 6010D	Chromium, Dissolved	0.66J	ug/L	10.0	07/03/18 10:23	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	07/03/18 10:23	
EPA 6010D	Iron, Dissolved	540	ug/L	50.0	07/03/18 10:23	
EPA 6010D	Magnesium, Dissolved	19100	ug/L	500	07/03/18 10:23	
EPA 6010D	Manganese, Dissolved	237	ug/L	5.0	07/03/18 10:23	
EPA 6010D	Potassium, Dissolved	14600	ug/L	2500	07/03/18 10:23	
EPA 6010D	Sodium, Dissolved	52300	ug/L	1000	07/03/18 10:23	
EPA 6010D	Vanadium, Dissolved	1.0J	ug/L	15.0	07/03/18 10:23	B
SM 2320B	Alkalinity, Total as CaCO3	197	mg/L	5.0	07/12/18 09:02	
SM 2540C	Total Dissolved Solids	400	mg/L	20.0	07/05/18 12:37	
SM 4500-S-2 D	Sulfide, Total	0.039	mg/L	0.020	07/05/18 15:50	
EPA 300.0	Chloride	35.7	mg/L	1.2	07/01/18 01:28	
EPA 300.0	Sulfate	81.3	mg/L	1.2	07/01/18 01:28	
EPA 410.4	Chemical Oxygen Demand	34.8J	mg/L	50.0	07/12/18 16:22	
SM 5310C	Total Organic Carbon	9.4	mg/L	1.0	07/10/18 02:55	
10437878007	**062818-MW19D**					
EPA 6010D	Barium, Dissolved	10.8	ug/L	10.0	07/03/18 10:25	
EPA 6010D	Calcium, Dissolved	43000	ug/L	500	07/03/18 10:25	
EPA 6010D	Cobalt, Dissolved	0.62J	ug/L	10.0	07/03/18 10:25	
EPA 6010D	Magnesium, Dissolved	18800	ug/L	500	07/03/18 10:25	
EPA 6010D	Manganese, Dissolved	1.3J	ug/L	5.0	07/03/18 10:25	
EPA 6010D	Potassium, Dissolved	4340	ug/L	2500	07/03/18 10:25	
EPA 6010D	Sodium, Dissolved	14700	ug/L	1000	07/03/18 10:25	
EPA 6010D	Vanadium, Dissolved	6.5J	ug/L	15.0	07/03/18 10:25	
EPA 6010D	Zinc, Dissolved	3.2J	ug/L	20.0	07/03/18 10:25	
SM 2320B	Alkalinity, Total as CaCO3	166	mg/L	5.0	07/12/18 09:06	
SM 2540C	Total Dissolved Solids	250	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	7.2	mg/L	1.2	07/01/18 01:43	
EPA 300.0	Nitrate as N	4.8	mg/L	0.10	07/01/18 01:43	H1
EPA 300.0	Sulfate	23.2	mg/L	1.2	07/01/18 01:43	
EPA 353.2	Nitrogen, NO2 plus NO3	4.8	mg/L	0.50	07/11/18 13:14	
SM 5310C	Total Organic Carbon	0.95J	mg/L	1.0	07/10/18 03:11	
10437878008	**062818-MW15D**					
EPA 6010D	Aluminum, Dissolved	126J	ug/L	200	07/03/18 10:30	
EPA 6010D	Barium, Dissolved	12.0	ug/L	10.0	07/03/18 10:30	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437878008	**062818-MW15D**					
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	07/03/18 10:30	
EPA 6010D	Calcium, Dissolved	39000	ug/L	500	07/03/18 10:30	
EPA 6010D	Chromium, Dissolved	0.52J	ug/L	10.0	07/03/18 10:30	
EPA 6010D	Cobalt, Dissolved	0.89J	ug/L	10.0	07/03/18 10:30	
EPA 6010D	Iron, Dissolved	154	ug/L	50.0	07/03/18 10:30	
EPA 6010D	Magnesium, Dissolved	14800	ug/L	500	07/03/18 10:30	
EPA 6010D	Manganese, Dissolved	9.3	ug/L	5.0	07/03/18 10:30	
EPA 6010D	Potassium, Dissolved	2710	ug/L	2500	07/03/18 10:30	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	07/03/18 10:30	
EPA 6010D	Vanadium, Dissolved	10.7J	ug/L	15.0	07/03/18 10:30	
SM 2320B	Alkalinity, Total as CaCO3	178	mg/L	5.0	07/12/18 09:11	
SM 2540C	Total Dissolved Solids	237	mg/L	10.0	07/05/18 12:37	
EPA 300.0	Chloride	3.0	mg/L	1.2	07/01/18 04:01	FS
EPA 300.0	Nitrate as N	1.9	mg/L	0.10	07/01/18 04:01	FS,H1,M1
EPA 300.0	Sulfate	6.3	mg/L	1.2	07/01/18 04:01	FS
EPA 353.2	Nitrogen, NO2 plus NO3	1.9	mg/L	0.10	07/11/18 12:24	
SM 5310C	Total Organic Carbon	0.86J	mg/L	1.0	07/10/18 03:27	
10437878009	**062818-FD3**					
EPA 6010D	Barium, Dissolved	27.5	ug/L	10.0	07/03/18 10:32	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/03/18 10:32	
EPA 6010D	Cadmium, Dissolved	0.27J	ug/L	3.0	07/03/18 10:32	
EPA 6010D	Calcium, Dissolved	53500	ug/L	500	07/03/18 10:32	
EPA 6010D	Cobalt, Dissolved	0.80J	ug/L	10.0	07/03/18 10:32	
EPA 6010D	Iron, Dissolved	5.4J	ug/L	50.0	07/03/18 10:32	
EPA 6010D	Magnesium, Dissolved	15500	ug/L	500	07/03/18 10:32	
EPA 6010D	Manganese, Dissolved	1.2J	ug/L	5.0	07/03/18 10:32	
EPA 6010D	Potassium, Dissolved	2200J	ug/L	2500	07/03/18 10:32	
EPA 6010D	Sodium, Dissolved	13300	ug/L	1000	07/03/18 10:32	
EPA 6010D	Vanadium, Dissolved	7.7J	ug/L	15.0	07/03/18 10:32	
EPA 6010D	Zinc, Dissolved	2.7J	ug/L	20.0	07/03/18 10:32	
SM 2320B	Alkalinity, Total as CaCO3	165	mg/L	5.0	07/12/18 09:15	
SM 2540C	Total Dissolved Solids	252	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	10.8	mg/L	1.2	07/01/18 05:04	FS
EPA 300.0	Nitrate as N	4.2	mg/L	0.10	07/01/18 05:04	FS,H3
EPA 300.0	Sulfate	33.9	mg/L	1.2	07/01/18 05:04	FS
EPA 353.2	Nitrogen, NO2 plus NO3	4.2	mg/L	0.50	07/11/18 13:17	
SM 5310C	Total Organic Carbon	0.89J	mg/L	1.0	07/10/18 04:17	
10437878010	**062818-FD4**					
RSK 175	Methane	6.9J	ug/L	10.0	07/05/18 12:03	
EPA 6010D	Barium, Dissolved	21.0	ug/L	10.0	07/03/18 10:33	
EPA 6010D	Cadmium, Dissolved	0.33J	ug/L	3.0	07/03/18 10:33	
EPA 6010D	Calcium, Dissolved	53300	ug/L	500	07/03/18 10:33	
EPA 6010D	Cobalt, Dissolved	1.8J	ug/L	10.0	07/03/18 10:33	
EPA 6010D	Iron, Dissolved	39.9J	ug/L	50.0	07/03/18 10:33	
EPA 6010D	Magnesium, Dissolved	14700	ug/L	500	07/03/18 10:33	
EPA 6010D	Manganese, Dissolved	6.1	ug/L	5.0	07/03/18 10:33	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437878010	**062818-FD4**					
EPA 6010D	Nickel, Dissolved	14.0J	ug/L	20.0	07/03/18 10:33	
EPA 6010D	Potassium, Dissolved	1850J	ug/L	2500	07/03/18 10:33	
EPA 6010D	Sodium, Dissolved	14200	ug/L	1000	07/03/18 10:33	
EPA 6010D	Vanadium, Dissolved	7.5J	ug/L	15.0	07/03/18 10:33	
SM 2320B	Alkalinity, Total as CaCO3	156	mg/L	5.0	07/12/18 09:18	
SM 2540C	Total Dissolved Solids	288	mg/L	20.0	07/05/18 12:37	
EPA 300.0	Chloride	11.4	mg/L	1.2	07/01/18 05:19	FS
EPA 300.0	Nitrate as N	5.5	mg/L	0.10	07/01/18 05:19	FS,H3
EPA 300.0	Sulfate	32.3	mg/L	1.2	07/01/18 05:19	FS
EPA 353.2	Nitrogen, NO2 plus NO3	5.4	mg/L	0.50	07/11/18 13:20	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	07/10/18 04:33	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437878

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548021

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548021 [MPRP/835 (Lab ID: 2979582)
  - Vanadium, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548032

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437879002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2979630)
  - Mercury, Dissolved
- MSD (Lab ID: 2979631)
  - Mercury, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 114118

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437878001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 492016)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- 062818-MW14D (Lab ID: 10437878003)
- 062818-MW15D (Lab ID: 10437878008)
- 062818-MW17D (Lab ID: 10437878006)
- 062818-MW19D (Lab ID: 10437878007)
- 062818-MW20D (Lab ID: 10437878005)
- 062818-MW5D (Lab ID: 10437878004)
- 062818-MW9D (Lab ID: 10437878001)
- 062818-MW9U (Lab ID: 10437878002)

H3: Sample was received or analysis requested beyond the recognized method holding time.
- 062818-FD3 (Lab ID: 10437878009)
- 062818-FD4 (Lab ID: 10437878010)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547969

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2979323)
  - Chloride
  - Nitrate as N
- MSD (Lab ID: 2979324)
  - Chloride
  - Nitrate as N

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2979327)
  - Nitrate as N
- MS (Lab ID: 2979329)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Nitrate as N
- MSD (Lab ID: 2979328)
  - Nitrate as N
- MSD (Lab ID: 2979330)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549717

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 549717

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2987489)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
10 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW9D **Lab ID: 10437878001** Collected: 06/28/18 12:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 10:37	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 10:37	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 10:37	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:15	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:15	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:15	7440-38-2	
Barium, Dissolved	**27.0**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:15	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:15	7440-41-7	
Cadmium, Dissolved	**0.27J**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:15	7440-43-9	
Calcium, Dissolved	**52100**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:15	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:15	7440-47-3	
Cobalt, Dissolved	**0.78J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:15	7440-48-4	
Copper, Dissolved	**1.4J**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:15	7440-50-8	
Iron, Dissolved	**6.1J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:15	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:15	7439-92-1	
Magnesium, Dissolved	**15000**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:15	7439-95-4	
Manganese, Dissolved	**1.7J**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:15	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:15	7440-02-0	
Potassium, Dissolved	**2130J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:15	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:15	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:15	7440-22-4	
Sodium, Dissolved	**13100**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:15	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:15	7440-28-0	
Vanadium, Dissolved	**7.4J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:15	7440-62-2	
Zinc, Dissolved	**3.3J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:15	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:30	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**164**	mg/L	5.0	1.0	1		07/12/18 08:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**272**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:39	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**10.7**	mg/L	1.2	0.28	1		06/30/18 23:42	16887-00-6	
Nitrate as N	**4.3**	mg/L	0.10	0.015	1		06/30/18 23:42	14797-55-8	H1
Sulfate	**33.9**	mg/L	1.2	0.19	1		06/30/18 23:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW9D **Lab ID: 10437878001** Collected: 06/28/18 12:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.1**	mg/L	0.50	0.054	5		07/11/18 13:11		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:50		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.99J**	mg/L	1.0	0.20	1		07/10/18 01:32	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW9U **Lab ID: 10437878002** Collected: 06/28/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 10:44	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 10:44	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 10:44	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**23.0J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:17	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:17	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:17	7440-38-2	
Barium, Dissolved	**20.7**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:17	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:17	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:17	7440-43-9	
Calcium, Dissolved	**52500**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:17	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:17	7440-47-3	
Cobalt, Dissolved	**0.92J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:17	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:17	7440-50-8	
Iron, Dissolved	**44.0J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:17	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:17	7439-92-1	
Magnesium, Dissolved	**14500**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:17	7439-95-4	
Manganese, Dissolved	**5.7**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:17	7439-96-5	
Nickel, Dissolved	**11.6J**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:17	7440-02-0	
Potassium, Dissolved	**1840J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:17	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:17	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:17	7440-22-4	
Sodium, Dissolved	**13900**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:17	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:17	7440-28-0	
Vanadium, Dissolved	**7.2J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:17	7440-62-2	
Zinc, Dissolved	**3.0J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:17	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:32	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**156**	mg/L	5.0	1.0	1		07/12/18 08:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**276**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:44	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.4**	mg/L	1.2	0.28	1		07/01/18 00:27	16887-00-6	FS
Nitrate as N	**5.7**	mg/L	0.10	0.015	1		07/01/18 00:27	14797-55-8	FS,H1
Sulfate	**32.9**	mg/L	1.2	0.19	1		07/01/18 00:27	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW9U **Lab ID: 10437878002** Collected: 06/28/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.6**	mg/L	0.50	0.054	5		07/11/18 13:34		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:51		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.20	1		07/10/18 01:48	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW14D **Lab ID: 10437878003** Collected: 06/28/18 14:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 10:51	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 10:51	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 10:51	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**68.4J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:19	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:19	7440-36-0	
Arsenic, Dissolved	**5.4J**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:19	7440-38-2	
Barium, Dissolved	**34.0**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:19	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:19	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:19	7440-43-9	
Calcium, Dissolved	**27900**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:19	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:19	7440-47-3	
Cobalt, Dissolved	**2.6J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:19	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:19	7440-50-8	
Iron, Dissolved	**526**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:19	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:19	7439-92-1	
Magnesium, Dissolved	**8530**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:19	7439-95-4	
Manganese, Dissolved	**774**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:19	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:19	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:19	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:19	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:19	7440-22-4	
Sodium, Dissolved	**27600**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:19	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:19	7440-28-0	
Vanadium, Dissolved	**4.6J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:19	7440-62-2	
Zinc, Dissolved	**4.8J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:19	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:35	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**164**	mg/L	5.0	1.0	1		07/12/18 08:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**216**	mg/L	10.0	5.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:46	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.9**	mg/L	1.2	0.28	1		07/01/18 00:43	16887-00-6	
Nitrate as N	**0.055J**	mg/L	0.10	0.015	1		07/01/18 00:43	14797-55-8	H1
Sulfate	**4.5**	mg/L	1.2	0.19	1		07/01/18 00:43	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW14D **Lab ID: 10437878003** Collected: 06/28/18 14:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.040J**	mg/L	0.10	0.011	1		07/11/18 12:16		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:51		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**4.9**	mg/L	1.0	0.20	1		07/10/18 02:05	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW5D **Lab ID: 10437878004** Collected: 06/28/18 15:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 10:58	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 10:58	74-85-1	
Methane	**7.1J**	ug/L	10.0	4.9	1		07/05/18 10:58	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**104J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:20	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:20	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:20	7440-38-2	
Barium, Dissolved	**96.4**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:20	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:20	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:20	7440-43-9	
Calcium, Dissolved	**48500**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:20	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:20	7440-47-3	
Cobalt, Dissolved	**0.81J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:20	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:20	7440-50-8	
Iron, Dissolved	**83.0**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:20	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:20	7439-92-1	
Magnesium, Dissolved	**14700**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:20	7439-95-4	
Manganese, Dissolved	**12.4**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:20	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:20	7440-02-0	
Potassium, Dissolved	**1460J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:20	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:20	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:20	7440-22-4	
Sodium, Dissolved	**17100**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:20	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:20	7440-28-0	
Vanadium, Dissolved	**6.7J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:20	7440-62-2	
Zinc, Dissolved	**3.6J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:20	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:37	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**220**	mg/L	5.0	1.0	1		07/12/18 08:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**240**	mg/L	10.0	5.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:48	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.1J**	mg/L	1.2	0.28	1		07/01/18 00:58	16887-00-6	
Nitrate as N	**0.18**	mg/L	0.10	0.015	1		07/01/18 00:58	14797-55-8	H1
Sulfate	**1.8**	mg/L	1.2	0.19	1		07/01/18 00:58	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW5D **Lab ID: 10437878004** Collected: 06/28/18 15:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.23**	mg/L	0.10	0.011	1		07/11/18 12:17		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/10/18 10:29	07/10/18 15:51		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.86J**	mg/L	1.0	0.20	1		07/10/18 02:21	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW20D **Lab ID: 10437878005** Collected: 06/28/18 16:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 11:05	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 11:05	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 11:05	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:22	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:22	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:22	7440-38-2	
Barium, Dissolved	**21.1**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:22	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:22	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:22	7440-43-9	
Calcium, Dissolved	**57000**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:22	7440-70-2	
Chromium, Dissolved	**0.50J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:22	7440-47-3	
Cobalt, Dissolved	**0.75J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:22	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:22	7440-50-8	
Iron, Dissolved	**10.3J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:22	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:22	7439-92-1	
Magnesium, Dissolved	**22300**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:22	7439-95-4	
Manganese, Dissolved	**7.6**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:22	7439-96-5	
Nickel, Dissolved	**1.1J**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:22	7440-02-0	
Potassium, Dissolved	**3820**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:22	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:22	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:22	7440-22-4	
Sodium, Dissolved	**19500**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:22	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:22	7440-28-0	
Vanadium, Dissolved	**5.0J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:22	7440-62-2	
Zinc, Dissolved	**3.4J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:22	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:39	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**261**	mg/L	5.0	1.0	1		07/12/18 08:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**322**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:49	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.5**	mg/L	1.2	0.28	1		07/01/18 01:13	16887-00-6	FS
Nitrate as N	**1.1**	mg/L	0.10	0.015	1		07/01/18 01:13	14797-55-8	FS,H1
Sulfate	**8.1**	mg/L	1.2	0.19	1		07/01/18 01:13	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW20D **Lab ID: 10437878005** Collected: 06/28/18 16:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.2**	mg/L	0.10	0.011	1		07/11/18 12:19		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:22		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		07/10/18 02:38	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW17D **Lab ID: 10437878006** Collected: 06/28/18 17:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 11:12	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 11:12	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 11:12	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:23	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:23	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:23	7440-38-2	
Barium, Dissolved	**80.8**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:23	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:23	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:23	7440-43-9	
Calcium, Dissolved	**43200**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:23	7440-70-2	
Chromium, Dissolved	**0.66J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:23	7440-47-3	
Cobalt, Dissolved	**1.4J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:23	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:23	7440-50-8	
Iron, Dissolved	**540**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:23	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:23	7439-92-1	
Magnesium, Dissolved	**19100**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:23	7439-95-4	
Manganese, Dissolved	**237**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:23	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:23	7440-02-0	
Potassium, Dissolved	**14600**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:23	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:23	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:23	7440-22-4	
Sodium, Dissolved	**52300**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:23	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:23	7440-28-0	
Vanadium, Dissolved	**1.0J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:23	7440-62-2	B
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:23	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:46	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**197**	mg/L	5.0	1.0	1		07/12/18 09:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**400**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.039**	mg/L	0.020	0.0054	1		07/05/18 15:50	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**35.7**	mg/L	1.2	0.28	1		07/01/18 01:28	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		07/01/18 01:28	14797-55-8	H1
Sulfate	**81.3**	mg/L	1.2	0.19	1		07/01/18 01:28	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW17D **Lab ID: 10437878006** Collected: 06/28/18 17:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.011**	mg/L	0.10	0.011	1		07/11/18 12:20		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**34.8J**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:22		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**9.4**	mg/L	1.0	0.20	1		07/10/18 02:55	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW19D **Lab ID: 10437878007** Collected: 06/28/18 18:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 11:20	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 11:20	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 11:20	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:25	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:25	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:25	7440-38-2	
Barium, Dissolved	**10.8**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:25	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:25	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:25	7440-43-9	
Calcium, Dissolved	**43000**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:25	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:25	7440-47-3	
Cobalt, Dissolved	**0.62J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:25	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:25	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:25	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:25	7439-92-1	
Magnesium, Dissolved	**18800**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:25	7439-95-4	
Manganese, Dissolved	**1.3J**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:25	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:25	7440-02-0	
Potassium, Dissolved	**4340**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:25	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:25	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:25	7440-22-4	
Sodium, Dissolved	**14700**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:25	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:25	7440-28-0	
Vanadium, Dissolved	**6.5J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:25	7440-62-2	
Zinc, Dissolved	**3.2J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:25	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:48	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**166**	mg/L	5.0	1.0	1		07/12/18 09:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**250**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:52	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.2**	mg/L	1.2	0.28	1		07/01/18 01:43	16887-00-6	
Nitrate as N	**4.8**	mg/L	0.10	0.015	1		07/01/18 01:43	14797-55-8	H1
Sulfate	**23.2**	mg/L	1.2	0.19	1		07/01/18 01:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW19D **Lab ID: 10437878007** Collected: 06/28/18 18:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.8**	mg/L	0.50	0.054	5		07/11/18 13:14		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:23		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.95J**	mg/L	1.0	0.20	1		07/10/18 03:11	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW15D **Lab ID: 10437878008** Collected: 06/28/18 19:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 11:27	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 11:27	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 11:27	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**126J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:30	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:30	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:30	7440-38-2	
Barium, Dissolved	**12.0**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:30	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:30	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:30	7440-43-9	
Calcium, Dissolved	**39000**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:30	7440-70-2	
Chromium, Dissolved	**0.52J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:30	7440-47-3	
Cobalt, Dissolved	**0.89J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:30	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:30	7440-50-8	
Iron, Dissolved	**154**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:30	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:30	7439-92-1	
Magnesium, Dissolved	**14800**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:30	7439-95-4	
Manganese, Dissolved	**9.3**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:30	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:30	7440-02-0	
Potassium, Dissolved	**2710**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:30	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:30	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:30	7440-22-4	
Sodium, Dissolved	**15600**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:30	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:30	7440-28-0	
Vanadium, Dissolved	**10.7J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:30	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:30	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:51	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**178**	mg/L	5.0	1.0	1		07/12/18 09:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**237**	mg/L	10.0	5.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:53	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.0**	mg/L	1.2	0.28	1		07/01/18 04:01	16887-00-6	FS
Nitrate as N	**1.9**	mg/L	0.10	0.015	1		07/01/18 04:01	14797-55-8	FS,H1, M1
Sulfate	**6.3**	mg/L	1.2	0.19	1		07/01/18 04:01	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-MW15D **Lab ID: 10437878008** Collected: 06/28/18 19:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.9**	mg/L	0.10	0.011	1		07/11/18 12:24		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:23		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.86J**	mg/L	1.0	0.20	1		07/10/18 03:27	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-FD3 **Lab ID: 10437878009** Collected: 06/28/18 08:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 11:48	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 11:48	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 11:48	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:32	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:32	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:32	7440-38-2	
Barium, Dissolved	**27.5**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:32	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:32	7440-41-7	
Cadmium, Dissolved	**0.27J**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:32	7440-43-9	
Calcium, Dissolved	**53500**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:32	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:32	7440-47-3	
Cobalt, Dissolved	**0.80J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:32	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:32	7440-50-8	
Iron, Dissolved	**5.4J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:32	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:32	7439-92-1	
Magnesium, Dissolved	**15500**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:32	7439-95-4	
Manganese, Dissolved	**1.2J**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:32	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:32	7440-02-0	
Potassium, Dissolved	**2200J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:32	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:32	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:32	7440-22-4	
Sodium, Dissolved	**13300**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:32	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:32	7440-28-0	
Vanadium, Dissolved	**7.7J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:32	7440-62-2	
Zinc, Dissolved	**2.7J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:32	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:53	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**165**	mg/L	5.0	1.0	1		07/12/18 09:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**252**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 15:54	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**10.8**	mg/L	1.2	0.28	1		07/01/18 05:04	16887-00-6	FS
Nitrate as N	**4.2**	mg/L	0.10	0.015	1		07/01/18 05:04	14797-55-8	FS,H3
Sulfate	**33.9**	mg/L	1.2	0.19	1		07/01/18 05:04	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-FD3 **Lab ID: 10437878009** Collected: 06/28/18 08:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.2**	mg/L	0.50	0.054	5		07/11/18 13:17		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:24		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.89J**	mg/L	1.0	0.20	1		07/10/18 04:17	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-FD4 **Lab ID: 10437878010** Collected: 06/28/18 08:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 12:03	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 12:03	74-85-1	
Methane	**6.9J**	ug/L	10.0	4.9	1		07/05/18 12:03	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:33	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:33	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:33	7440-38-2	
Barium, Dissolved	**21.0**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:33	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:33	7440-41-7	
Cadmium, Dissolved	**0.33J**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:33	7440-43-9	
Calcium, Dissolved	**53300**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:33	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:33	7440-47-3	
Cobalt, Dissolved	**1.8J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:33	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:33	7440-50-8	
Iron, Dissolved	**39.9J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:33	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:33	7439-92-1	
Magnesium, Dissolved	**14700**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:33	7439-95-4	
Manganese, Dissolved	**6.1**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:33	7439-96-5	
Nickel, Dissolved	**14.0J**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:33	7440-02-0	
Potassium, Dissolved	**1850J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:33	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:33	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:33	7440-22-4	
Sodium, Dissolved	**14200**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:33	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:33	7440-28-0	
Vanadium, Dissolved	**7.5J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:33	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:33	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:55	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**156**	mg/L	5.0	1.0	1		07/12/18 09:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**288**	mg/L	20.0	10.0	1		07/05/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:35	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.4**	mg/L	1.2	0.28	1		07/01/18 05:19	16887-00-6	FS
Nitrate as N	**5.5**	mg/L	0.10	0.015	1		07/01/18 05:19	14797-55-8	FS,H3
Sulfate	**32.3**	mg/L	1.2	0.19	1		07/01/18 05:19	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Sample: 062818-FD4 **Lab ID: 10437878010** Collected: 06/28/18 08:05 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.4**	mg/L	0.50	0.054	5		07/11/18 13:20		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:24		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		07/10/18 04:33	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 548566 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008

METHOD BLANK: 2982249 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/05/18 08:50	
Ethene	ug/L	<2.9	10.0	2.9	07/05/18 08:50	
Methane	ug/L	<4.9	10.0	4.9	07/05/18 08:50	

LABORATORY CONTROL SAMPLE & LCSD: 2982250 2982251

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	107	94	94	85-115	0	20	
Ethene	ug/L	106	100	99.9	94	94	85-115	0	20	
Methane	ug/L	60.7	59.0	59.4	97	98	85-115	1	20	

SAMPLE DUPLICATE: 2982252

Parameter	Units	60273651006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	ND	<4.9		20	

SAMPLE DUPLICATE: 2982253

Parameter	Units	10437683014 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	ND	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 548567 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437878009, 10437878010

METHOD BLANK: 2982254 | Matrix: Water
Associated Lab Samples: 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/05/18 11:41	
Ethene	ug/L	<2.9	10.0	2.9	07/05/18 11:41	
Methane	ug/L	<4.9	10.0	4.9	07/05/18 11:41	

LABORATORY CONTROL SAMPLE & LCSD: 2982255 2982256

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	105	94	92	85-115	2	20	
Ethene	ug/L	106	99.9	97.7	94	92	85-115	2	20	
Methane	ug/L	60.7	59.4	57.7	98	95	85-115	3	20	

SAMPLE DUPLICATE: 2982257

Parameter	Units	10437878009 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

SAMPLE DUPLICATE: 2982258

Parameter	Units	10437879002 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 548032 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 2979628 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/02/18 15:53	

LABORATORY CONTROL SAMPLE: 2979629

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979630 2979631

Parameter	Units	10437879002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	2.7	2.7	54	53	80-120	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 548021 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 2979582 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/03/18 09:50	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/03/18 09:50	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/03/18 09:50	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/03/18 09:50	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/03/18 09:50	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/03/18 09:50	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/03/18 09:50	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/03/18 09:50	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/03/18 09:50	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/03/18 09:50	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	07/03/18 09:50	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/03/18 09:50	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/03/18 09:50	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/03/18 09:50	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/03/18 09:50	
Potassium, Dissolved	ug/L	<310	2500	310	07/03/18 09:50	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/03/18 09:50	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/03/18 09:50	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	07/03/18 09:50	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/03/18 09:50	
Vanadium, Dissolved	ug/L	0.33J	15.0	0.29	07/03/18 09:50	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/03/18 09:50	

LABORATORY CONTROL SAMPLE: 2979583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21600	108	80-120	
Antimony, Dissolved	ug/L	1000	999	100	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19700	99	80-120	
Chromium, Dissolved	ug/L	1000	1020	102	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	988	99	80-120	
Iron, Dissolved	ug/L	20000	20300	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

LABORATORY CONTROL SAMPLE: 2979583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	20300	102	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	20100	101	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	509	102	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	1020	102	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979584 2979585

Parameter	Units	10437879001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21300	21700	106	109	75-125	2	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1030	101	103	75-125	2	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	999	1020	100	102	75-125	2	20	
Barium, Dissolved	ug/L	42.2	1000	1000	1050	1070	101	102	75-125	2	20	
Beryllium, Dissolved	ug/L	0.12J	1000	1000	1020	1040	102	104	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1010	1030	101	103	75-125	2	20	
Calcium, Dissolved	ug/L	31000	20000	20000	50100	51500	96	103	75-125	3	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	995	1020	99	102	75-125	2	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	985	1000	98	100	75-125	2	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	971	993	97	99	75-125	2	20	
Iron, Dissolved	ug/L	18.8J	20000	20000	19800	20300	99	101	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	999	1020	100	102	75-125	2	20	
Magnesium, Dissolved	ug/L	9330	20000	20000	29300	30100	100	104	75-125	3	20	
Manganese, Dissolved	ug/L	11.2	1000	1000	1020	1050	101	104	75-125	3	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	981	1000	98	100	75-125	2	20	
Potassium, Dissolved	ug/L	1040J	20000	20000	21300	21800	101	104	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1040	1060	104	106	75-125	2	20	
Silver, Dissolved	ug/L	<0.38	500	500	503	513	101	103	75-125	2	20	
Sodium, Dissolved	ug/L	12400	20000	20000	31600	32200	96	99	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	992	1010	99	101	75-125	2	20	
Vanadium, Dissolved	ug/L	1.9J	1000	1000	1000	1020	100	102	75-125	2	20	
Zinc, Dissolved	ug/L	7.0J	1000	1000	1010	1030	100	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 549920 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 2988532 — Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/12/18 07:50	

LABORATORY CONTROL SAMPLE & LCSD: 2988533 2988534

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.1	41.0	103	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988535 2988536

Parameter	Units	10437685007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	45.5	40	40	86.2	88.9	102	109	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988537 2988538

Parameter	Units	10437685008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	25.7	40	40	66.0	66.3	101	101	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 548601 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 2982345 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/05/18 12:37	

LABORATORY CONTROL SAMPLE & LCSD: 2982346 2982347

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	946	976	95	98	80-120	3	10	

SAMPLE DUPLICATE: 2982348

Parameter	Units	10437787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1880	1770	6	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 114118 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 492013 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/05/18 15:35	

LABORATORY CONTROL SAMPLE: 492014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	102	90-110	

MATRIX SPIKE SAMPLE: 492016

Parameter	Units	10437878001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.13	63	75-125	M1

SAMPLE DUPLICATE: 492015

Parameter	Units	10437878001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 547969 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007

METHOD BLANK: 2979318 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	06/30/18 17:41	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	06/30/18 17:41	FS
Sulfate	mg/L	<0.19	1.2	0.19	06/30/18 17:41	FS

LABORATORY CONTROL SAMPLE: 2979319

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.1	97	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979321 2979322

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	13.2	13.2	96	96	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.94	0.94	94	94	90-110	0	20	
Sulfate	mg/L	3.2	12.5	12.5	15.8	15.8	100	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979323 2979324

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.7	12.5	12.5	26.1	26.1	84	84	90-110	0	20	M1
Nitrate as N	mg/L	3.8	1	1	4.4	4.4	58	59	90-110	0	20	M1
Sulfate	mg/L	13.1	12.5	12.5	24.6	24.6	92	93	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 547970 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437878008, 10437878009, 10437878010

METHOD BLANK: 2979325 | Matrix: Water
Associated Lab Samples: 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	07/01/18 01:58	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	07/01/18 01:58	FS
Sulfate	mg/L	<0.19	1.2	0.19	07/01/18 01:58	FS

LABORATORY CONTROL SAMPLE: 2979326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.5	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979327 2979328

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.9	12.5	12.5	18.3	18.4	92	92	90-110	0	20	
Nitrate as N	mg/L	1.8	1	1	2.7	2.7	82	84	90-110	1	20	M1
Sulfate	mg/L	7.9	12.5	12.5	20.0	20.1	97	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979329 2979330

Parameter	Units	10437878008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	12.5	12.5	14.9	14.8	95	95	90-110	1	20	FS
Nitrate as N	mg/L	1.9	1	1	2.8	2.8	84	83	90-110	0	20	FS,M1
Sulfate	mg/L	6.3	12.5	12.5	18.8	18.7	100	99	90-110	1	20	FS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 549715 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008

METHOD BLANK: 2987471 | Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:25	

LABORATORY CONTROL SAMPLE: 2987472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.91	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987473 2987474

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.011	1	1	0.98	0.96	98	95	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987475 2987476

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.0	5	5	8.8	8.5	96	91	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 549717 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437878009, 10437878010

METHOD BLANK: 2987486 | Matrix: Water
Associated Lab Samples: 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:59	

LABORATORY CONTROL SAMPLE: 2987487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987488 2987489

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.9	87	101	90-110	5	20	E,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987490 2987491

Parameter	Units	10437878009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	9.4	9.2	103	99	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 549425 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004

METHOD BLANK: 2986224 | Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/10/18 15:43	

LABORATORY CONTROL SAMPLE: 2986225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	308	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986226 2986227

Parameter	Units	10437867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	261	275	100	106	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986228 2986229

Parameter	Units	10437867003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	262	265	104	105	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 549997 — Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 — Analysis Description: 410.4 COD
Associated Lab Samples: 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 2988765 — Matrix: Water
Associated Lab Samples: 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/12/18 16:20	

LABORATORY CONTROL SAMPLE: 2988766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	305	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988767 2988768

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	274	267	107	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988769 2988770

Parameter	Units	10437878005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	266	273	106	109	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

QC Batch: 146772 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

METHOD BLANK: 580011 Matrix: Water
Associated Lab Samples: 10437878001, 10437878002, 10437878003, 10437878004, 10437878005, 10437878006, 10437878007, 10437878008, 10437878009, 10437878010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/10/18 00:58	

LABORATORY CONTROL SAMPLE: 580012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580015 580016

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.93J	25	25	25.6	26.0	99	100	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 580018 580019

Parameter	Units	10438034001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	25.4	25.7	100	101	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H1	Analysis conducted outside the recognized method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437878001	**062818-MW9D**	RSK 175	548566		
10437878002	**062818-MW9U**	RSK 175	548566		
10437878003	**062818-MW14D**	RSK 175	548566		
10437878004	**062818-MW5D**	RSK 175	548566		
10437878005	**062818-MW20D**	RSK 175	548566		
10437878006	**062818-MW17D**	RSK 175	548566		
10437878007	**062818-MW19D**	RSK 175	548566		
10437878008	**062818-MW15D**	RSK 175	548566		
10437878009	**062818-FD3**	RSK 175	548567		
10437878010	**062818-FD4**	RSK 175	548567		
10437878001	**062818-MW9D**	EPA 3010	548021	EPA 6010D	548191
10437878002	**062818-MW9U**	EPA 3010	548021	EPA 6010D	548191
10437878003	**062818-MW14D**	EPA 3010	548021	EPA 6010D	548191
10437878004	**062818-MW5D**	EPA 3010	548021	EPA 6010D	548191
10437878005	**062818-MW20D**	EPA 3010	548021	EPA 6010D	548191
10437878006	**062818-MW17D**	EPA 3010	548021	EPA 6010D	548191
10437878007	**062818-MW19D**	EPA 3010	548021	EPA 6010D	548191
10437878008	**062818-MW15D**	EPA 3010	548021	EPA 6010D	548191
10437878009	**062818-FD3**	EPA 3010	548021	EPA 6010D	548191
10437878010	**062818-FD4**	EPA 3010	548021	EPA 6010D	548191
10437878001	**062818-MW9D**	EPA 7470A	548032	EPA 7470A	548185
10437878002	**062818-MW9U**	EPA 7470A	548032	EPA 7470A	548185
10437878003	**062818-MW14D**	EPA 7470A	548032	EPA 7470A	548185
10437878004	**062818-MW5D**	EPA 7470A	548032	EPA 7470A	548185
10437878005	**062818-MW20D**	EPA 7470A	548032	EPA 7470A	548185
10437878006	**062818-MW17D**	EPA 7470A	548032	EPA 7470A	548185
10437878007	**062818-MW19D**	EPA 7470A	548032	EPA 7470A	548185
10437878008	**062818-MW15D**	EPA 7470A	548032	EPA 7470A	548185
10437878009	**062818-FD3**	EPA 7470A	548032	EPA 7470A	548185
10437878010	**062818-FD4**	EPA 7470A	548032	EPA 7470A	548185
10437878001	**062818-MW9D**	SM 2320B	549920		
10437878002	**062818-MW9U**	SM 2320B	549920		
10437878003	**062818-MW14D**	SM 2320B	549920		
10437878004	**062818-MW5D**	SM 2320B	549920		
10437878005	**062818-MW20D**	SM 2320B	549920		
10437878006	**062818-MW17D**	SM 2320B	549920		
10437878007	**062818-MW19D**	SM 2320B	549920		
10437878008	**062818-MW15D**	SM 2320B	549920		
10437878009	**062818-FD3**	SM 2320B	549920		
10437878010	**062818-FD4**	SM 2320B	549920		
10437878001	**062818-MW9D**	SM 2540C	548601		
10437878002	**062818-MW9U**	SM 2540C	548601		
10437878003	**062818-MW14D**	SM 2540C	548601		
10437878004	**062818-MW5D**	SM 2540C	548601		
10437878005	**062818-MW20D**	SM 2540C	548601		
10437878006	**062818-MW17D**	SM 2540C	548601		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437878007	**062818-MW19D**	SM 2540C	548601		
10437878008	**062818-MW15D**	SM 2540C	548601		
10437878009	**062818-FD3**	SM 2540C	548601		
10437878010	**062818-FD4**	SM 2540C	548601		
10437878001	**062818-MW9D**	SM 4500-S-2 D	114118		
10437878002	**062818-MW9U**	SM 4500-S-2 D	114118		
10437878003	**062818-MW14D**	SM 4500-S-2 D	114118		
10437878004	**062818-MW5D**	SM 4500-S-2 D	114118		
10437878005	**062818-MW20D**	SM 4500-S-2 D	114118		
10437878006	**062818-MW17D**	SM 4500-S-2 D	114118		
10437878007	**062818-MW19D**	SM 4500-S-2 D	114118		
10437878008	**062818-MW15D**	SM 4500-S-2 D	114118		
10437878009	**062818-FD3**	SM 4500-S-2 D	114118		
10437878010	**062818-FD4**	SM 4500-S-2 D	114118		
10437878001	**062818-MW9D**	EPA 300.0	547969		
10437878002	**062818-MW9U**	EPA 300.0	547969		
10437878003	**062818-MW14D**	EPA 300.0	547969		
10437878004	**062818-MW5D**	EPA 300.0	547969		
10437878005	**062818-MW20D**	EPA 300.0	547969		
10437878006	**062818-MW17D**	EPA 300.0	547969		
10437878007	**062818-MW19D**	EPA 300.0	547969		
10437878008	**062818-MW15D**	EPA 300.0	547970		
10437878009	**062818-FD3**	EPA 300.0	547970		
10437878010	**062818-FD4**	EPA 300.0	547970		
10437878001	**062818-MW9D**	EPA 353.2	549715		
10437878002	**062818-MW9U**	EPA 353.2	549715		
10437878003	**062818-MW14D**	EPA 353.2	549715		
10437878004	**062818-MW5D**	EPA 353.2	549715		
10437878005	**062818-MW20D**	EPA 353.2	549715		
10437878006	**062818-MW17D**	EPA 353.2	549715		
10437878007	**062818-MW19D**	EPA 353.2	549715		
10437878008	**062818-MW15D**	EPA 353.2	549715		
10437878009	**062818-FD3**	EPA 353.2	549717		
10437878010	**062818-FD4**	EPA 353.2	549717		
10437878001	**062818-MW9D**	EPA 410.4	549425	EPA 410.4	549578
10437878002	**062818-MW9U**	EPA 410.4	549425	EPA 410.4	549578
10437878003	**062818-MW14D**	EPA 410.4	549425	EPA 410.4	549578
10437878004	**062818-MW5D**	EPA 410.4	549425	EPA 410.4	549578
10437878005	**062818-MW20D**	EPA 410.4	549997	EPA 410.4	550150
10437878006	**062818-MW17D**	EPA 410.4	549997	EPA 410.4	550150
10437878007	**062818-MW19D**	EPA 410.4	549997	EPA 410.4	550150
10437878008	**062818-MW15D**	EPA 410.4	549997	EPA 410.4	550150
10437878009	**062818-FD3**	EPA 410.4	549997	EPA 410.4	550150
10437878010	**062818-FD4**	EPA 410.4	549997	EPA 410.4	550150
10437878001	**062818-MW9D**	SM 5310C	146772		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437878

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437878002	**062818-MW9U**	SM 5310C	146772		
10437878003	**062818-MW14D**	SM 5310C	146772		
10437878004	**062818-MW5D**	SM 5310C	146772		
10437878005	**062818-MW20D**	SM 5310C	146772		
10437878006	**062818-MW17D**	SM 5310C	146772		
10437878007	**062818-MW19D**	SM 5310C	146772		
10437878008	**062818-MW15D**	SM 5310C	146772		
10437878009	**062818-FD3**	SM 5310C	146772		
10437878010	**062818-FD4**	SM 5310C	146772		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500 Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location

WO# : 10437878

10437878

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		Requested (Y/N)
1	062818-MW9D	WT	G	6/28	1200	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				001
2	062818-MW9U				1245				9	X	X	X		X																002
3	062818-MW14D				1400				9	X	X	X		X																003
4	062818-MW5D				1530				9	X	X	X		X																004
5	062818-MW20D				1630				9	X	X	X		X																005
6	062818-MW17D				1715				9	X	X	X		X																006
7	062818-MW19D				1800				9	X	X	X		X																007
8	062818-MW15D			↓	1900	↓	↓	↓	9	X	X	X		X				↓	↓	↓	↓	↓	↓	↓	↓	↓				008
~~9~~	~~Trip Blank~~	↓	—	—	—	—	—	—	~~2~~				X				X													Ignore
10	062818-FD3	WT	G	6/28	800	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				009
11	062818-FD4	↓	↓	↓	805	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				010
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	4.9	Y	Y	Y
*Field filtered by client							3.3			
							3.1			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/28/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #:

WO# : 10437878

PM: JMG **Due Date: 07/10/18**
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2356, 2347, 2370

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.8, 3.2, 3.0 **Cooler Temp Corrected (°C):** 4.9, 3.3, 3.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 6/30/18 LJ

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-10:1/1 1-10:1/1 1-10:1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1410	Temp: see above	Corrected Temp: see above
Time: 1430 put in cooler		
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce…] s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437878 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/30/2018 Results Requested By: 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	062818-MW9D	PS	6/28/2018 12:00	10437878001	Water	2	X	
2	062818-MW9U	PS	6/28/2018 12:45	10437878002	Water	2	X	
3	062818-MW14D	PS	6/28/2018 14:00	10437878003	Water	2	X	
4	062818-MW5D	PS	6/28/2018 15:30	10437878004	Water	2	X	
5	062818-MW20D	PS	6/28/2018 16:30	10437878005	Water	2	X	
6	062818-MW17D	PS	6/28/2018 17:15	10437878006	Water	2	X	
7	062818-MW19D	PS	6/28/2018 18:00	10437878007	Water	2	X	
8	062818-MW15D	PS	6/28/2018 19:00	10437878008	Water	2	X	
9	062818-FD3	PS	6/28/2018 08:00	10437878009	Water	2	X	
10	062818-FD4	PS	6/28/2018 08:05	10437878010	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle/Pace	7/2/18 1240	B. Mathews	7/3/18 1040
2				
3				

Comments

Cooler Temperature on Receipt 1.8 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mpls

Project #:

WO#: 12111469
PM: HRZ **Due Date: 07/17/18**
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☐ No Seals Intact? ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5 Cooler Temp Corrected °C: 1.8 Biological Tissue Frozen? ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: BM 7/3/18

				Comments:
Chain of Custody Present?	☐ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Green Date: 7/5/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Pace Analytical®
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Workorder: 10437878 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 6/30/2018 **Results Requested By:** 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

WO# : 2079574

2079574

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	062818-MW9D	PS	6/28/2018 12:00	10437878001	Water	1	X	
2	062818-MW9U	PS	6/28/2018 12:45	10437878002	Water	1	X	
3	062818-MW14D	PS	6/28/2018 14:00	10437878003	Water	1	X	
4	062818-MW5D	PS	6/28/2018 15:30	10437878004	Water	1	X	
5	062818-MW20D	PS	6/28/2018 16:30	10437878005	Water	1	X	
6	062818-MW17D	PS	6/28/2018 17:15	10437878006	Water	1	X	
7	062818-MW19D	PS	6/28/2018 18:00	10437878007	Water	1	X	
8	062818-MW15D	PS	6/28/2018 19:00	10437878008	Water	1	X	
9	062818-FD3	PS	6/28/2018 08:00	10437878009	Water	1	X	
10	062818-FD4	PS	6/28/2018 08:05	10437878010	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible signature]	7/2/18 1230	Fed Ex	
2	Fed Ex	7/3/18 0925	[illegible signature] Pace	7/3/18 0925
3				

Comments

Cooler Temperature on Receipt 1.6 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

Sample Condition Up

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

WO#: 2079574

PM: CMM **Due Date: 07/17/18**

CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 7/3/18 CMM

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☒Yes	☐No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☐Yes	☒No	☐N/A	5
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	6
Sufficient Volume:	☒Yes	☐No	☐N/A	7
Correct Containers Used:	☒Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	9
Sample Labels match COC:	☒Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	14
Trip Blank Present:	☐Yes	☒No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ______________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 13, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437879

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437879001	**062918-MW3D**	Water	06/29/18 06:30	06/30/18 09:30
10437879002	**062918-MW1D**	Water	06/29/18 07:30	06/30/18 09:30
10437879003	**062918-MW2D**	Water	06/29/18 08:30	06/30/18 09:30
10437879004	**062918-MW18D**	Water	06/29/18 09:30	06/30/18 09:30
10437879005	**062918-MW16D**	Water	06/29/18 10:25	06/30/18 09:30
10437879006	**062918-MW21D**	Water	06/29/18 11:15	06/30/18 09:30
10437879007	**062918-FD5**	Water	06/29/18 16:00	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437879001	**062918-MW3D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879002	**062918-MW1D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879003	**062918-MW2D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879004	**062918-MW18D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879005	**062918-MW16D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879006	**062918-MW21D**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437879007	**062918-FD5**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437879001	**062918-MW3D**					
EPA 6010D	Barium, Dissolved	42.2	ug/L	10.0	07/03/18 09:54	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/03/18 09:54	
EPA 6010D	Calcium, Dissolved	31000	ug/L	500	07/03/18 09:54	
EPA 6010D	Iron, Dissolved	18.8J	ug/L	50.0	07/03/18 09:54	
EPA 6010D	Magnesium, Dissolved	9330	ug/L	500	07/03/18 09:54	
EPA 6010D	Manganese, Dissolved	11.2	ug/L	5.0	07/03/18 09:54	
EPA 6010D	Potassium, Dissolved	1040J	ug/L	2500	07/03/18 09:54	
EPA 6010D	Sodium, Dissolved	12400	ug/L	1000	07/03/18 09:54	
EPA 6010D	Vanadium, Dissolved	1.9J	ug/L	15.0	07/03/18 09:54	B
EPA 6010D	Zinc, Dissolved	7.0J	ug/L	20.0	07/03/18 09:54	
SM 2320B	Alkalinity, Total as CaCO3	140	mg/L	5.0	07/12/18 12:06	
SM 2540C	Total Dissolved Solids	193	mg/L	10.0	07/05/18 16:04	
EPA 300.0	Chloride	1.3	mg/L	1.2	07/01/18 05:34	
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	07/01/18 05:34	
EPA 300.0	Sulfate	2.8	mg/L	1.2	07/01/18 05:34	
EPA 353.2	Nitrogen, NO2 plus NO3	0.23	mg/L	0.10	07/11/18 12:38	
SM 5310C	Total Organic Carbon	0.62J	mg/L	1.0	07/07/18 02:44	B
10437879002	**062918-MW1D**					
EPA 6010D	Barium, Dissolved	72.1	ug/L	10.0	07/03/18 10:02	
EPA 6010D	Calcium, Dissolved	50200	ug/L	500	07/03/18 10:02	
EPA 6010D	Cobalt, Dissolved	0.91J	ug/L	10.0	07/03/18 10:02	
EPA 6010D	Iron, Dissolved	8.7J	ug/L	50.0	07/03/18 10:02	
EPA 6010D	Magnesium, Dissolved	12500	ug/L	500	07/03/18 10:02	
EPA 6010D	Manganese, Dissolved	56.5	ug/L	5.0	07/03/18 10:02	
EPA 6010D	Potassium, Dissolved	1180J	ug/L	2500	07/03/18 10:02	
EPA 6010D	Sodium, Dissolved	11100	ug/L	1000	07/03/18 10:02	
EPA 6010D	Vanadium, Dissolved	1.5J	ug/L	15.0	07/03/18 10:02	B
EPA 6010D	Zinc, Dissolved	5.0J	ug/L	20.0	07/03/18 10:02	
SM 2320B	Alkalinity, Total as CaCO3	195	mg/L	5.0	07/12/18 12:10	
SM 2540C	Total Dissolved Solids	237	mg/L	10.0	07/05/18 16:04	
EPA 300.0	Chloride	1.8	mg/L	1.2	07/01/18 05:49	FS
EPA 300.0	Nitrate as N	0.12	mg/L	0.10	07/01/18 05:49	FS
EPA 300.0	Sulfate	3.9	mg/L	1.2	07/01/18 05:49	FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.13	mg/L	0.10	07/11/18 12:39	
SM 5310C	Total Organic Carbon	2.3	mg/L	1.0	07/07/18 02:28	B
10437879003	**062918-MW2D**					
RSK 175	Methane	18.7	ug/L	10.0	07/05/18 13:29	
EPA 6010D	Barium, Dissolved	90.7	ug/L	10.0	07/03/18 10:04	
EPA 6010D	Calcium, Dissolved	38800	ug/L	500	07/03/18 10:04	
EPA 6010D	Cobalt, Dissolved	1.9J	ug/L	10.0	07/03/18 10:04	
EPA 6010D	Iron, Dissolved	1040	ug/L	50.0	07/03/18 10:04	
EPA 6010D	Magnesium, Dissolved	9910	ug/L	500	07/03/18 10:04	
EPA 6010D	Manganese, Dissolved	839	ug/L	5.0	07/03/18 10:04	
EPA 6010D	Nickel, Dissolved	1.4J	ug/L	20.0	07/03/18 10:04	
EPA 6010D	Potassium, Dissolved	3360	ug/L	2500	07/03/18 10:04	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	07/03/18 10:04	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437879003	**062918-MW2D**					
EPA 6010D	Vanadium, Dissolved	0.81J	ug/L	15.0	07/03/18 10:04	B
EPA 6010D	Zinc, Dissolved	4.6J	ug/L	20.0	07/03/18 10:04	
SM 2320B	Alkalinity, Total as CaCO3	174	mg/L	5.0	07/12/18 12:14	
SM 2540C	Total Dissolved Solids	207	mg/L	10.0	07/05/18 16:04	
EPA 300.0	Chloride	1.7	mg/L	1.2	07/01/18 06:04	
EPA 300.0	Nitrate as N	0.043J	mg/L	0.10	07/01/18 06:04	
EPA 300.0	Sulfate	3.7	mg/L	1.2	07/01/18 06:04	
EPA 353.2	Nitrogen, NO2 plus NO3	0.016J	mg/L	0.10	07/11/18 12:40	
SM 5310C	Total Organic Carbon	2.8	mg/L	1.0	07/07/18 02:11	
10437879004	**062918-MW18D**					
EPA 6010D	Aluminum, Dissolved	38.2J	ug/L	200	07/03/18 10:05	
EPA 6010D	Barium, Dissolved	50.8	ug/L	10.0	07/03/18 10:05	
EPA 6010D	Calcium, Dissolved	21800	ug/L	500	07/03/18 10:05	
EPA 6010D	Chromium, Dissolved	0.53J	ug/L	10.0	07/03/18 10:05	
EPA 6010D	Cobalt, Dissolved	0.97J	ug/L	10.0	07/03/18 10:05	
EPA 6010D	Iron, Dissolved	99.0	ug/L	50.0	07/03/18 10:05	
EPA 6010D	Magnesium, Dissolved	15900	ug/L	500	07/03/18 10:05	
EPA 6010D	Manganese, Dissolved	46.8	ug/L	5.0	07/03/18 10:05	
EPA 6010D	Potassium, Dissolved	3840	ug/L	2500	07/03/18 10:05	
EPA 6010D	Sodium, Dissolved	19200	ug/L	1000	07/03/18 10:05	
EPA 6010D	Vanadium, Dissolved	0.57J	ug/L	15.0	07/03/18 10:05	B
EPA 6010D	Zinc, Dissolved	2.6J	ug/L	20.0	07/03/18 10:05	
SM 2320B	Alkalinity, Total as CaCO3	156	mg/L	5.0	07/12/18 12:18	
SM 2540C	Total Dissolved Solids	183	mg/L	10.0	07/05/18 16:04	
EPA 300.0	Chloride	2.4	mg/L	1.2	07/01/18 06:20	
EPA 300.0	Sulfate	7.6	mg/L	1.2	07/01/18 06:20	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	07/07/18 01:55	B
10437879005	**062918-MW16D**					
EPA 6010D	Barium, Dissolved	54.7	ug/L	10.0	07/03/18 10:10	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	07/03/18 10:10	
EPA 6010D	Cadmium, Dissolved	0.33J	ug/L	3.0	07/03/18 10:10	
EPA 6010D	Calcium, Dissolved	57800	ug/L	500	07/03/18 10:10	
EPA 6010D	Chromium, Dissolved	0.81J	ug/L	10.0	07/03/18 10:10	
EPA 6010D	Cobalt, Dissolved	0.62J	ug/L	10.0	07/03/18 10:10	
EPA 6010D	Magnesium, Dissolved	17500	ug/L	500	07/03/18 10:10	
EPA 6010D	Manganese, Dissolved	3.1J	ug/L	5.0	07/03/18 10:10	
EPA 6010D	Potassium, Dissolved	1340J	ug/L	2500	07/03/18 10:10	
EPA 6010D	Sodium, Dissolved	17600	ug/L	1000	07/03/18 10:10	
EPA 6010D	Vanadium, Dissolved	10.1J	ug/L	15.0	07/03/18 10:10	
SM 2320B	Alkalinity, Total as CaCO3	220	mg/L	5.0	07/12/18 12:23	
SM 2540C	Total Dissolved Solids	303	mg/L	10.0	07/06/18 12:27	
EPA 300.0	Chloride	5.4	mg/L	1.2	07/01/18 07:05	
EPA 300.0	Nitrate as N	5.2	mg/L	0.10	07/01/18 07:05	
EPA 300.0	Sulfate	17.1	mg/L	1.2	07/01/18 07:05	
EPA 353.2	Nitrogen, NO2 plus NO3	5.0	mg/L	0.50	07/11/18 13:22	
SM 5310C	Total Organic Carbon	2.1	mg/L	1.0	07/07/18 01:38	B

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437879006	**062918-MW21D**					
EPA 6010D	Aluminum, Dissolved	75.9J	ug/L	200	07/03/18 10:12	
EPA 6010D	Barium, Dissolved	74.3	ug/L	10.0	07/03/18 10:12	
EPA 6010D	Calcium, Dissolved	23500	ug/L	500	07/03/18 10:12	
EPA 6010D	Cobalt, Dissolved	0.85J	ug/L	10.0	07/03/18 10:12	
EPA 6010D	Iron, Dissolved	269	ug/L	50.0	07/03/18 10:12	
EPA 6010D	Magnesium, Dissolved	21300	ug/L	500	07/03/18 10:12	
EPA 6010D	Manganese, Dissolved	98.8	ug/L	5.0	07/03/18 10:12	
EPA 6010D	Potassium, Dissolved	4250	ug/L	2500	07/03/18 10:12	
EPA 6010D	Sodium, Dissolved	23300	ug/L	1000	07/03/18 10:12	
EPA 6010D	Vanadium, Dissolved	0.46J	ug/L	15.0	07/03/18 10:12	B
SM 2320B	Alkalinity, Total as CaCO3	188	mg/L	5.0	07/12/18 12:26	
SM 2540C	Total Dissolved Solids	214	mg/L	10.0	07/06/18 12:27	
EPA 300.0	Chloride	2.8	mg/L	1.2	07/01/18 07:20	
EPA 300.0	Sulfate	8.9	mg/L	1.2	07/01/18 07:20	
SM 5310C	Total Organic Carbon	1.7	mg/L	1.0	07/07/18 00:48	B
10437879007	**062918-FD5**					
EPA 6010D	Barium, Dissolved	54.4	ug/L	10.0	07/03/18 10:14	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/03/18 10:14	
EPA 6010D	Calcium, Dissolved	57800	ug/L	500	07/03/18 10:14	
EPA 6010D	Chromium, Dissolved	0.79J	ug/L	10.0	07/03/18 10:14	
EPA 6010D	Cobalt, Dissolved	0.59J	ug/L	10.0	07/03/18 10:14	
EPA 6010D	Magnesium, Dissolved	17500	ug/L	500	07/03/18 10:14	
EPA 6010D	Potassium, Dissolved	1280J	ug/L	2500	07/03/18 10:14	
EPA 6010D	Sodium, Dissolved	17300	ug/L	1000	07/03/18 10:14	
EPA 6010D	Vanadium, Dissolved	9.8J	ug/L	15.0	07/03/18 10:14	
SM 2320B	Alkalinity, Total as CaCO3	220	mg/L	5.0	07/12/18 12:31	
SM 2540C	Total Dissolved Solids	318	mg/L	10.0	07/06/18 12:27	
EPA 300.0	Chloride	5.5	mg/L	1.2	07/01/18 07:35	
EPA 300.0	Nitrate as N	5.2	mg/L	0.10	07/01/18 07:35	
EPA 300.0	Sulfate	17.1	mg/L	1.2	07/01/18 07:35	
EPA 353.2	Nitrogen, NO2 plus NO3	5.2	mg/L	0.50	07/11/18 13:23	
SM 5310C	Total Organic Carbon	1.5	mg/L	1.0	07/07/18 00:32	B

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548021

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548021 [MPRP/835 (Lab ID: 2979582)
  - Vanadium, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548032

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437879002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2979630)
  - Mercury, Dissolved
- MSD (Lab ID: 2979631)
  - Mercury, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 114118

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437878001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 492016)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:

7 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2979327)
  - Nitrate as N
- MS (Lab ID: 2979329)
  - Nitrate as N
- MSD (Lab ID: 2979328)
  - Nitrate as N
- MSD (Lab ID: 2979330)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549717

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 549717

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2987489)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437879

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 13, 2018

General Information:
7 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 146746

B: Analyte was detected in the associated method blank.
- BLANK for HBN 146746 [WETA/241 (Lab ID: 579939)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW3D **Lab ID: 10437879001** Collected: 06/29/18 06:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 12:53	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 12:53	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 12:53	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 09:54	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 09:54	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 09:54	7440-38-2	
Barium, Dissolved	**42.2**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 09:54	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 09:54	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 09:54	7440-43-9	
Calcium, Dissolved	**31000**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 09:54	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 09:54	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 09:54	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 09:54	7440-50-8	
Iron, Dissolved	**18.8J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 09:54	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 09:54	7439-92-1	
Magnesium, Dissolved	**9330**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 09:54	7439-95-4	
Manganese, Dissolved	**11.2**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 09:54	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 09:54	7440-02-0	
Potassium, Dissolved	**1040J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 09:54	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 09:54	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 09:54	7440-22-4	
Sodium, Dissolved	**12400**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 09:54	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 09:54	7440-28-0	
Vanadium, Dissolved	**1.9J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 09:54	7440-62-2	B
Zinc, Dissolved	**7.0J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 09:54	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 15:57	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**140**	mg/L	5.0	1.0	1		07/12/18 12:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**193**	mg/L	10.0	5.0	1		07/05/18 16:04		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:38	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.28	1		07/01/18 05:34	16887-00-6	
Nitrate as N	**0.14**	mg/L	0.10	0.015	1		07/01/18 05:34	14797-55-8	
Sulfate	**2.8**	mg/L	1.2	0.19	1		07/01/18 05:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW3D **Lab ID: 10437879001** Collected: 06/29/18 06:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.23**	mg/L	0.10	0.011	1		07/11/18 12:38		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:24		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.62J**	mg/L	1.0	0.20	1		07/07/18 02:44	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW1D **Lab ID: 10437879002** Collected: 06/29/18 07:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:14	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:14	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 13:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:02	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:02	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:02	7440-38-2	
Barium, Dissolved	**72.1**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:02	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:02	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:02	7440-43-9	
Calcium, Dissolved	**50200**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:02	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:02	7440-47-3	
Cobalt, Dissolved	**0.91J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:02	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:02	7440-50-8	
Iron, Dissolved	**8.7J**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:02	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:02	7439-92-1	
Magnesium, Dissolved	**12500**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:02	7439-95-4	
Manganese, Dissolved	**56.5**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:02	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:02	7440-02-0	
Potassium, Dissolved	**1180J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:02	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:02	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:02	7440-22-4	
Sodium, Dissolved	**11100**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:02	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:02	7440-28-0	
Vanadium, Dissolved	**1.5J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:02	7440-62-2	B
Zinc, Dissolved	**5.0J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:02	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:00	7439-97-6	M1
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**195**	mg/L	5.0	1.0	1		07/12/18 12:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**237**	mg/L	10.0	5.0	1		07/05/18 16:04		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.8**	mg/L	1.2	0.28	1		07/01/18 05:49	16887-00-6	FS
Nitrate as N	**0.12**	mg/L	0.10	0.015	1		07/01/18 05:49	14797-55-8	FS
Sulfate	**3.9**	mg/L	1.2	0.19	1		07/01/18 05:49	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW1D **Lab ID: 10437879002** Collected: 06/29/18 07:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.13**	mg/L	0.10	0.011	1		07/11/18 12:39		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:24		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.3**	mg/L	1.0	0.20	1		07/07/18 02:28	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW2D **Lab ID: 10437879003** Collected: 06/29/18 08:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:29	74-85-1	
Methane	**18.7**	ug/L	10.0	4.9	1		07/05/18 13:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:04	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:04	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:04	7440-38-2	
Barium, Dissolved	**90.7**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:04	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:04	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:04	7440-43-9	
Calcium, Dissolved	**38800**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:04	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:04	7440-47-3	
Cobalt, Dissolved	**1.9J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:04	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:04	7440-50-8	
Iron, Dissolved	**1040**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:04	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:04	7439-92-1	
Magnesium, Dissolved	**9910**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:04	7439-95-4	
Manganese, Dissolved	**839**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:04	7439-96-5	
Nickel, Dissolved	**1.4J**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:04	7440-02-0	
Potassium, Dissolved	**3360**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:04	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:04	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:04	7440-22-4	
Sodium, Dissolved	**15600**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:04	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:04	7440-28-0	
Vanadium, Dissolved	**0.81J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:04	7440-62-2	B
Zinc, Dissolved	**4.6J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:04	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:14	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**174**	mg/L	5.0	1.0	1		07/12/18 12:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**207**	mg/L	10.0	5.0	1		07/05/18 16:04		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.28	1		07/01/18 06:04	16887-00-6	
Nitrate as N	**0.043J**	mg/L	0.10	0.015	1		07/01/18 06:04	14797-55-8	
Sulfate	**3.7**	mg/L	1.2	0.19	1		07/01/18 06:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW2D **Lab ID: 10437879003** Collected: 06/29/18 08:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.016J**	mg/L	0.10	0.011	1		07/11/18 12:40		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:24		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.8**	mg/L	1.0	0.20	1		07/07/18 02:11	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW18D **Lab ID: 10437879004** Collected: 06/29/18 09:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:36	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 13:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**38.2J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:05	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:05	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:05	7440-38-2	
Barium, Dissolved	**50.8**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:05	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:05	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:05	7440-43-9	
Calcium, Dissolved	**21800**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:05	7440-70-2	
Chromium, Dissolved	**0.53J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:05	7440-47-3	
Cobalt, Dissolved	**0.97J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:05	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:05	7440-50-8	
Iron, Dissolved	**99.0**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:05	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:05	7439-92-1	
Magnesium, Dissolved	**15900**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:05	7439-95-4	
Manganese, Dissolved	**46.8**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:05	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:05	7440-02-0	
Potassium, Dissolved	**3840**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:05	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:05	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:05	7440-22-4	
Sodium, Dissolved	**19200**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:05	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:05	7440-28-0	
Vanadium, Dissolved	**0.57J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:05	7440-62-2	B
Zinc, Dissolved	**2.6J**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:05	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:16	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**156**	mg/L	5.0	1.0	1		07/12/18 12:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**183**	mg/L	10.0	5.0	1		07/05/18 16:04		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:40	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.28	1		07/01/18 06:20	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		07/01/18 06:20	14797-55-8	
Sulfate	**7.6**	mg/L	1.2	0.19	1		07/01/18 06:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW18D **Lab ID: 10437879004** Collected: 06/29/18 09:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.011**	mg/L	0.10	0.011	1		07/11/18 12:41		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:25		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.20	1		07/07/18 01:55	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW16D **Lab ID: 10437879005** Collected: 06/29/18 10:25 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:43	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:43	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 13:43	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:10	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:10	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:10	7440-38-2	
Barium, Dissolved	**54.7**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:10	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:10	7440-41-7	
Cadmium, Dissolved	**0.33J**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:10	7440-43-9	
Calcium, Dissolved	**57800**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:10	7440-70-2	
Chromium, Dissolved	**0.81J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:10	7440-47-3	
Cobalt, Dissolved	**0.62J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:10	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:10	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:10	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:10	7439-92-1	
Magnesium, Dissolved	**17500**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:10	7439-95-4	
Manganese, Dissolved	**3.1J**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:10	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:10	7440-02-0	
Potassium, Dissolved	**1340J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:10	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:10	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:10	7440-22-4	
Sodium, Dissolved	**17600**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:10	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:10	7440-28-0	
Vanadium, Dissolved	**10.1J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:10	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:10	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:23	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**220**	mg/L	5.0	1.0	1		07/12/18 12:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**303**	mg/L	10.0	5.0	1		07/06/18 12:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:41	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.4**	mg/L	1.2	0.28	1		07/01/18 07:05	16887-00-6	
Nitrate as N	**5.2**	mg/L	0.10	0.015	1		07/01/18 07:05	14797-55-8	
Sulfate	**17.1**	mg/L	1.2	0.19	1		07/01/18 07:05	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW16D **Lab ID: 10437879005** Collected: 06/29/18 10:25 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.0**	mg/L	0.50	0.054	5		07/11/18 13:22		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:25		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.1**	mg/L	1.0	0.20	1		07/07/18 01:38	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW21D **Lab ID: 10437879006** Collected: 06/29/18 11:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:50	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:50	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 13:50	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**75.9J**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:12	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:12	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:12	7440-38-2	
Barium, Dissolved	**74.3**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:12	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:12	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:12	7440-43-9	
Calcium, Dissolved	**23500**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:12	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:12	7440-47-3	
Cobalt, Dissolved	**0.85J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:12	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:12	7440-50-8	
Iron, Dissolved	**269**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:12	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:12	7439-92-1	
Magnesium, Dissolved	**21300**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:12	7439-95-4	
Manganese, Dissolved	**98.8**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:12	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:12	7440-02-0	
Potassium, Dissolved	**4250**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:12	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:12	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:12	7440-22-4	
Sodium, Dissolved	**23300**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:12	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:12	7440-28-0	
Vanadium, Dissolved	**0.46J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:12	7440-62-2	B
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:12	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:25	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**188**	mg/L	5.0	1.0	1		07/12/18 12:26		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**214**	mg/L	10.0	5.0	1		07/06/18 12:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:41	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.8**	mg/L	1.2	0.28	1		07/01/18 07:20	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		07/01/18 07:20	14797-55-8	
Sulfate	**8.9**	mg/L	1.2	0.19	1		07/01/18 07:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-MW21D **Lab ID: 10437879006** Collected: 06/29/18 11:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.011**	mg/L	0.10	0.011	1		07/11/18 12:43		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:25		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.20	1		07/07/18 00:48	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-FD5 **Lab ID: 10437879007** Collected: 06/29/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/05/18 13:57	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/05/18 13:57	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/05/18 13:57	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/02/18 11:31	07/03/18 10:14	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/02/18 11:31	07/03/18 10:14	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/02/18 11:31	07/03/18 10:14	7440-38-2	
Barium, Dissolved	**54.4**	ug/L	10.0	0.18	1	07/02/18 11:31	07/03/18 10:14	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/02/18 11:31	07/03/18 10:14	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/02/18 11:31	07/03/18 10:14	7440-43-9	
Calcium, Dissolved	**57800**	ug/L	500	13.9	1	07/02/18 11:31	07/03/18 10:14	7440-70-2	
Chromium, Dissolved	**0.79J**	ug/L	10.0	0.49	1	07/02/18 11:31	07/03/18 10:14	7440-47-3	
Cobalt, Dissolved	**0.59J**	ug/L	10.0	0.50	1	07/02/18 11:31	07/03/18 10:14	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/02/18 11:31	07/03/18 10:14	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/02/18 11:31	07/03/18 10:14	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/02/18 11:31	07/03/18 10:14	7439-92-1	
Magnesium, Dissolved	**17500**	ug/L	500	9.8	1	07/02/18 11:31	07/03/18 10:14	7439-95-4	
Manganese, Dissolved	**<0.22**	ug/L	5.0	0.22	1	07/02/18 11:31	07/03/18 10:14	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/02/18 11:31	07/03/18 10:14	7440-02-0	
Potassium, Dissolved	**1280J**	ug/L	2500	310	1	07/02/18 11:31	07/03/18 10:14	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/02/18 11:31	07/03/18 10:14	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/02/18 11:31	07/03/18 10:14	7440-22-4	
Sodium, Dissolved	**17300**	ug/L	1000	21.5	1	07/02/18 11:31	07/03/18 10:14	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/02/18 11:31	07/03/18 10:14	7440-28-0	
Vanadium, Dissolved	**9.8J**	ug/L	15.0	0.29	1	07/02/18 11:31	07/03/18 10:14	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	07/02/18 11:31	07/03/18 10:14	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/02/18 09:58	07/02/18 16:28	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**220**	mg/L	5.0	1.0	1		07/12/18 12:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**318**	mg/L	10.0	5.0	1		07/06/18 12:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/05/18 16:42	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.5**	mg/L	1.2	0.28	1		07/01/18 07:35	16887-00-6	
Nitrate as N	**5.2**	mg/L	0.10	0.015	1		07/01/18 07:35	14797-55-8	
Sulfate	**17.1**	mg/L	1.2	0.19	1		07/01/18 07:35	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Sample: 062918-FD5 **Lab ID: 10437879007** Collected: 06/29/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.2**	mg/L	0.50	0.054	5		07/11/18 13:23		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:25		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.5**	mg/L	1.0	0.20	1		07/07/18 00:32	7440-44-0	B

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 548567 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2982254 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/05/18 11:41	
Ethene	ug/L	<2.9	10.0	2.9	07/05/18 11:41	
Methane	ug/L	<4.9	10.0	4.9	07/05/18 11:41	

LABORATORY CONTROL SAMPLE & LCSD: 2982255 2982256

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	107	105	94	92	85-115	2	20	
Ethene	ug/L	106	99.9	97.7	94	92	85-115	2	20	
Methane	ug/L	60.7	59.4	57.7	98	95	85-115	3	20	

SAMPLE DUPLICATE: 2982257

Parameter	Units	10437878009 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

SAMPLE DUPLICATE: 2982258

Parameter	Units	10437879002 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 548032 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2979628 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/02/18 15:53	

LABORATORY CONTROL SAMPLE: 2979629

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979630 2979631

Parameter	Units	10437879002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	2.7	2.7	54	53	80-120	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 548021 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2979582 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/03/18 09:50	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/03/18 09:50	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/03/18 09:50	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/03/18 09:50	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/03/18 09:50	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/03/18 09:50	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/03/18 09:50	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/03/18 09:50	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/03/18 09:50	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/03/18 09:50	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	07/03/18 09:50	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/03/18 09:50	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/03/18 09:50	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/03/18 09:50	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/03/18 09:50	
Potassium, Dissolved	ug/L	<310	2500	310	07/03/18 09:50	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/03/18 09:50	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/03/18 09:50	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	07/03/18 09:50	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/03/18 09:50	
Vanadium, Dissolved	ug/L	0.33J	15.0	0.29	07/03/18 09:50	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/03/18 09:50	

LABORATORY CONTROL SAMPLE: 2979583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21600	108	80-120	
Antimony, Dissolved	ug/L	1000	999	100	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	20000	19700	99	80-120	
Chromium, Dissolved	ug/L	1000	1020	102	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	988	99	80-120	
Iron, Dissolved	ug/L	20000	20300	102	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Magnesium, Dissolved	ug/L	20000	20300	102	80-120	
Manganese, Dissolved	ug/L	1000	1040	104	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

LABORATORY CONTROL SAMPLE: 2979583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Potassium, Dissolved	ug/L	20000	20100	101	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	509	102	80-120	
Sodium, Dissolved	ug/L	20000	20300	101	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	1020	102	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979584 2979585

Parameter	Units	10437879001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21300	21700	106	109	75-125	2	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1030	101	103	75-125	2	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	999	1020	100	102	75-125	2	20	
Barium, Dissolved	ug/L	42.2	1000	1000	1050	1070	101	102	75-125	2	20	
Beryllium, Dissolved	ug/L	0.12J	1000	1000	1020	1040	102	104	75-125	2	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1010	1030	101	103	75-125	2	20	
Calcium, Dissolved	ug/L	31000	20000	20000	50100	51500	96	103	75-125	3	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	995	1020	99	102	75-125	2	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	985	1000	98	100	75-125	2	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	971	993	97	99	75-125	2	20	
Iron, Dissolved	ug/L	18.8J	20000	20000	19800	20300	99	101	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	999	1020	100	102	75-125	2	20	
Magnesium, Dissolved	ug/L	9330	20000	20000	29300	30100	100	104	75-125	3	20	
Manganese, Dissolved	ug/L	11.2	1000	1000	1020	1050	101	104	75-125	3	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	981	1000	98	100	75-125	2	20	
Potassium, Dissolved	ug/L	1040J	20000	20000	21300	21800	101	104	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1040	1060	104	106	75-125	2	20	
Silver, Dissolved	ug/L	<0.38	500	500	503	513	101	103	75-125	2	20	
Sodium, Dissolved	ug/L	12400	20000	20000	31600	32200	96	99	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	992	1010	99	101	75-125	2	20	
Vanadium, Dissolved	ug/L	1.9J	1000	1000	1000	1020	100	102	75-125	2	20	
Zinc, Dissolved	ug/L	7.0J	1000	1000	1010	1030	100	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 549921 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2988539 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/12/18 11:10	

LABORATORY CONTROL SAMPLE & LCSD: 2988540 2988541

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.2	42.5	105	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988542 2988543

Parameter	Units	10438680003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	119	40	40	160	161	104	105	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988544 2988545

Parameter	Units	10438680004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	126	40	40	170	173	108	116	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 548602 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004

METHOD BLANK: 2982349 | Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/05/18 16:04	

LABORATORY CONTROL SAMPLE & LCSD: 2982350 2982351

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	954	950	95	95	80-120	0	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 548882 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437879005, 10437879006, 10437879007

METHOD BLANK: 2983780 | Matrix: Water
Associated Lab Samples: 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/06/18 12:27	

LABORATORY CONTROL SAMPLE: 2983781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	944	94	80-120	

SAMPLE DUPLICATE: 2983782

Parameter	Units	10437952001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1440	1410	2	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 114118 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 492013 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/05/18 15:35	

LABORATORY CONTROL SAMPLE: 492014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	102	90-110	

MATRIX SPIKE SAMPLE: 492016

Parameter	Units	10437878001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.13	63	75-125	M1

SAMPLE DUPLICATE: 492015

Parameter	Units	10437878001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 547970 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2979325 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	07/01/18 01:58	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	07/01/18 01:58	FS
Sulfate	mg/L	<0.19	1.2	0.19	07/01/18 01:58	FS

LABORATORY CONTROL SAMPLE: 2979326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.5	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979327 2979328

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.9	12.5	12.5	18.3	18.4	92	92	90-110	0	20	
Nitrate as N	mg/L	1.8	1	1	2.7	2.7	82	84	90-110	1	20	M1
Sulfate	mg/L	7.9	12.5	12.5	20.0	20.1	97	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979329 2979330

Parameter	Units	10437878008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	12.5	12.5	14.9	14.8	95	95	90-110	1	20	FS
Nitrate as N	mg/L	1.9	1	1	2.8	2.8	84	83	90-110	0	20	FS,M1
Sulfate	mg/L	6.3	12.5	12.5	18.8	18.7	100	99	90-110	1	20	FS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 549717 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2987486 | Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:59	

LABORATORY CONTROL SAMPLE: 2987487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987488 2987489

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.9	87	101	90-110	5	20	E,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987490 2987491

Parameter	Units	10437878009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	9.4	9.2	103	99	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 549997 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 2988765 Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/12/18 16:20	

LABORATORY CONTROL SAMPLE: 2988766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	305	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988767 2988768

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	274	267	107	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988769 2988770

Parameter	Units	10437878005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	266	273	106	109	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

QC Batch: 146746   Analysis Method: SM 5310C
QC Batch Method: SM 5310C   Analysis Description: 5310C TOC
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

METHOD BLANK: 579939   Matrix: Water
Associated Lab Samples: 10437879001, 10437879002, 10437879003, 10437879004, 10437879005, 10437879006, 10437879007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.23J	1.0	0.20	07/06/18 22:17	

LABORATORY CONTROL SAMPLE: 579940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 579941 579942

Parameter	Units	10437671001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.22J	25	25	25.4	25.2	101	100	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 579943 579944

Parameter	Units	10437456001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	4.6	25	25	29.2	29.5	99	100	80-120	1	20	

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437879

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437879001	**062918-MW3D**	RSK 175	548567		
10437879002	**062918-MW1D**	RSK 175	548567		
10437879003	**062918-MW2D**	RSK 175	548567		
10437879004	**062918-MW18D**	RSK 175	548567		
10437879005	**062918-MW16D**	RSK 175	548567		
10437879006	**062918-MW21D**	RSK 175	548567		
10437879007	**062918-FD5**	RSK 175	548567		
10437879001	**062918-MW3D**	EPA 3010	548021	EPA 6010D	548191
10437879002	**062918-MW1D**	EPA 3010	548021	EPA 6010D	548191
10437879003	**062918-MW2D**	EPA 3010	548021	EPA 6010D	548191
10437879004	**062918-MW18D**	EPA 3010	548021	EPA 6010D	548191
10437879005	**062918-MW16D**	EPA 3010	548021	EPA 6010D	548191
10437879006	**062918-MW21D**	EPA 3010	548021	EPA 6010D	548191
10437879007	**062918-FD5**	EPA 3010	548021	EPA 6010D	548191
10437879001	**062918-MW3D**	EPA 7470A	548032	EPA 7470A	548185
10437879002	**062918-MW1D**	EPA 7470A	548032	EPA 7470A	548185
10437879003	**062918-MW2D**	EPA 7470A	548032	EPA 7470A	548185
10437879004	**062918-MW18D**	EPA 7470A	548032	EPA 7470A	548185
10437879005	**062918-MW16D**	EPA 7470A	548032	EPA 7470A	548185
10437879006	**062918-MW21D**	EPA 7470A	548032	EPA 7470A	548185
10437879007	**062918-FD5**	EPA 7470A	548032	EPA 7470A	548185
10437879001	**062918-MW3D**	SM 2320B	549921		
10437879002	**062918-MW1D**	SM 2320B	549921		
10437879003	**062918-MW2D**	SM 2320B	549921		
10437879004	**062918-MW18D**	SM 2320B	549921		
10437879005	**062918-MW16D**	SM 2320B	549921		
10437879006	**062918-MW21D**	SM 2320B	549921		
10437879007	**062918-FD5**	SM 2320B	549921		
10437879001	**062918-MW3D**	SM 2540C	548602		
10437879002	**062918-MW1D**	SM 2540C	548602		
10437879003	**062918-MW2D**	SM 2540C	548602		
10437879004	**062918-MW18D**	SM 2540C	548602		
10437879005	**062918-MW16D**	SM 2540C	548882		
10437879006	**062918-MW21D**	SM 2540C	548882		
10437879007	**062918-FD5**	SM 2540C	548882		
10437879001	**062918-MW3D**	SM 4500-S-2 D	114118		
10437879002	**062918-MW1D**	SM 4500-S-2 D	114118		
10437879003	**062918-MW2D**	SM 4500-S-2 D	114118		
10437879004	**062918-MW18D**	SM 4500-S-2 D	114118		
10437879005	**062918-MW16D**	SM 4500-S-2 D	114118		
10437879006	**062918-MW21D**	SM 4500-S-2 D	114118		
10437879007	**062918-FD5**	SM 4500-S-2 D	114118		
10437879001	**062918-MW3D**	EPA 300.0	547970		
10437879002	**062918-MW1D**	EPA 300.0	547970		
10437879003	**062918-MW2D**	EPA 300.0	547970		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437879

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437879004	**062918-MW18D**	EPA 300.0	547970		
10437879005	**062918-MW16D**	EPA 300.0	547970		
10437879006	**062918-MW21D**	EPA 300.0	547970		
10437879007	**062918-FD5**	EPA 300.0	547970		
10437879001	**062918-MW3D**	EPA 353.2	549717		
10437879002	**062918-MW1D**	EPA 353.2	549717		
10437879003	**062918-MW2D**	EPA 353.2	549717		
10437879004	**062918-MW18D**	EPA 353.2	549717		
10437879005	**062918-MW16D**	EPA 353.2	549717		
10437879006	**062918-MW21D**	EPA 353.2	549717		
10437879007	**062918-FD5**	EPA 353.2	549717		
10437879001	**062918-MW3D**	EPA 410.4	549997	EPA 410.4	550150
10437879002	**062918-MW1D**	EPA 410.4	549997	EPA 410.4	550150
10437879003	**062918-MW2D**	EPA 410.4	549997	EPA 410.4	550150
10437879004	**062918-MW18D**	EPA 410.4	549997	EPA 410.4	550150
10437879005	**062918-MW16D**	EPA 410.4	549997	EPA 410.4	550150
10437879006	**062918-MW21D**	EPA 410.4	549997	EPA 410.4	550150
10437879007	**062918-FD5**	EPA 410.4	549997	EPA 410.4	550150
10437879001	**062918-MW3D**	SM 5310C	146746		
10437879002	**062918-MW1D**	SM 5310C	146746		
10437879003	**062918-MW2D**	SM 5310C	146746		
10437879004	**062918-MW18D**	SM 5310C	146746		
10437879005	**062918-MW16D**	SM 5310C	146746		
10437879006	**062918-MW21D**	SM 5310C	146746		
10437879007	**062918-FD5**	SM 5310C	146746		

REPORT OF LABORATORY ANALYSIS

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency

State / Location: WA / Freeman

WO# : 10437879

10437879

MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene R...	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested	
1	062918-MW30	WT	G	6/29	630	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X			24 holdwi
2	062918-MW10	↓	↓	↓	730	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			002
3	062918-MW20	↓	↓	↓	830	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			003
4	062918-MW180	↓	↓	↓	930	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			004
5	062918-MW160	↓	↓	↓	1025	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			005
6	062918-MW210	↓	↓	↓	1115	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			006
7	062918-F05	↓	↓	↓	1600	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X			007
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	JE / Jacobs	6/29/18	1530	[illegible] Pace	6/30/18	930	2.1	Y	Y	Y
*Field filtered by client							3.1			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: JE DATE Signed: 6/29/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR-CH2M Hill

Project #: WO#: 10437879

PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 744810332391, 2404

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.0, 3.3 **Cooler Temp Corrected (°C):** 2.1, 3.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** EM 6/30/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No MS/MSD Requested
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-7:1/1 1-7:1/1 1-7:1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☑ N/A EM 6/30	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1505	Temp: see above	Corrected Temp: see above
Time: 1525	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#:12111495
PM: HRZ Due Date: 07/17/18
CLIENT: PACE MPLS

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437879 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/30/2018 Results Requested By: 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	5632354 / 5310 TOC	LAB USE ONLY
1	062918-MW3D	PS	6/29/2018 06:30	10437879001	Water	2	X	
2	062918-MW1D	PS	6/29/2018 07:30	10437879002	Water	2	X	
3	062918-MW2D	PS	6/29/2018 08:30	10437879003	Water	2	X	
4	062918-MW18D	PS	6/29/2018 09:30	10437879004	Water	2	X	
5	062918-MW16D	PS	6/29/2018 10:25	10437879005	Water	2	X	
6	062918-MW21D	PS	6/29/2018 11:15	10437879006	Water	2	X	
7	062918-FD5	PS	6/29/2018 16:00	10437879007	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle / Pace	7/3/18 1535	[illegible]	7/3/18 1840
2	[illegible]	7/3/18 2230	[illegible]	7/5/18 0800
3				

Comments

Cooler Temperature on Receipt 3.3 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace

Project #:

WO#: 12111495
PM: HRZ Due Date: 07/17/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other: ______

Tracking Number: ______

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: ______ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 3.0 Cooler Temp Corrected °C: 3.3 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: M 7/5/18

Comments: M 7/5/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: ______ Date/Time: ______

Comments/Resolution: ______

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 7/5/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

Workorder: 10437879 **Workorder Name:** 1497 Freeman WA-Grain Handling

State Of Origin: WA

Pace Analytical®
www.pacelabs.com

Owner Received Date: 6/30/2018 **Results Requested By:** 7/17/2018

Report To

Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To

Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

WO#: 2079576

2079576

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	062918-MW3D	PS	6/29/2018 06:30	10437879001	Water	1	X	
2	062918-MW1D	PS	6/29/2018 07:30	10437879002	Water	1	X	
3	062918-MW2D	PS	6/29/2018 08:30	10437879003	Water	1	X	
4	062918-MW18D	PS	6/29/2018 09:30	10437879004	Water	1	X	
5	062918-MW16D	PS	6/29/2018 10:25	10437879005	Water	1	X	
6	062918-MW21D	PS	6/29/2018 11:15	10437879006	Water	1	X	
7	062918-FD5	PS	6/29/2018 16:00	10437879007	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] / PACE-MN	7/2/18 17:00	Fed Ex	
2	Fed Ex	7/3/18 0925	[signature]	7/3/18 0925
3				

Comments

Cooler Temperature on Receipt 1.3 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical
1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Rec

Projec

WO#: 2079576
PM: CMM Due Date: 07/17/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑Yes ☐No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/3/18 CMM

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☐No ☑N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ______________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 12, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437881

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437881001	**062918-MW3D**	Water	06/29/18 06:30	06/30/18 09:30
10437881002	**062918-MW1D**	Water	06/29/18 07:30	06/30/18 09:30
10437881003	**062918-MW2D**	Water	06/29/18 08:30	06/30/18 09:30
10437881004	**062918-MW18D**	Water	06/29/18 09:30	06/30/18 09:30
10437881005	**062918-MW16D**	Water	06/29/18 10:25	06/30/18 09:30
10437881006	**062918-MW21D**	Water	06/29/18 11:15	06/30/18 09:30
10437881007	**062918-FD5**	Water	06/29/18 16:00	06/30/18 09:30
10437881008	**Trip Blank**	Water	06/29/18 00:00	06/30/18 09:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437881001	**062918-MW3D**	EPA 8260B	AEZ	83	PASI-M
10437881002	**062918-MW1D**	EPA 8260B	AEZ	83	PASI-M
10437881003	**062918-MW2D**	EPA 8260B	AEZ	83	PASI-M
10437881004	**062918-MW18D**	EPA 8260B	AEZ	83	PASI-M
10437881005	**062918-MW16D**	EPA 8260B	AEZ	83	PASI-M
10437881006	**062918-MW21D**	EPA 8260B	AEZ	83	PASI-M
10437881007	**062918-FD5**	EPA 8260B	AEZ	83	PASI-M
10437881008	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437881006	**062918-MW21D**					
EPA 8260B	Carbon disulfide	0.11J	ug/L	1.0	07/09/18 18:24	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

General Information:
8 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549215

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 549236

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 549215

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- MS (Lab ID: 2985595)
  - Carbon tetrachloride

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

Analyte Comments:

QC Batch: 549215

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062918-MW16D (Lab ID: 10437881005)
  - Dichlorofluoromethane
- 062918-MW18D (Lab ID: 10437881004)
  - Dichlorofluoromethane
- 062918-MW1D (Lab ID: 10437881002)
  - Dichlorofluoromethane
- 062918-MW21D (Lab ID: 10437881006)
  - Dichlorofluoromethane
- 062918-MW2D (Lab ID: 10437881003)
  - Dichlorofluoromethane
- 062918-MW3D (Lab ID: 10437881001)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2985590)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2985596)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2985591)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCSD (Lab ID: 2985592)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2985595)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10437881008)
  - Dichlorofluoromethane

QC Batch: 549236

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062918-FD5 (Lab ID: 10437881007)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2985690)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 12, 2018

Analyte Comments:

QC Batch: 549236

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- DUP (Lab ID: 2985765)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2985691)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCSD (Lab ID: 2985763)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2985764)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW3D **Lab ID: 10437881001** Collected: 06/29/18 06:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:27	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:27	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:27	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 16:27	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:27	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:27	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:27	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:27	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 16:27	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:27	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:27	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 16:27	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:27	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:27	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:27	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:27	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:27	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:27	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:27	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 16:27	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:27	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 16:27	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 16:27	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 16:27	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 16:27	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:27	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 16:27	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 16:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 16:27	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 16:27	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:27	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 16:27	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:27	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:27	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:27	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:27	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 16:27	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 16:27	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 16:27	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 16:27	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:27	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 16:27	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 16:27	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:27	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:27	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW3D **Lab ID: 10437881001** Collected: 06/29/18 06:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 16:27	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 16:27	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 16:27	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 16:27	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:27	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:27	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:27	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:27	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:27	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 16:27	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 16:27	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 16:27	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:27	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 16:27	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 16:27	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 16:27	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 16:27	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 16:27	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 16:27	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 16:27	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:27	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:27	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:27	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:27	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:27	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:27	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:27	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:27	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 16:27	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:27	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:27	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:27	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:27	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 16:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/09/18 16:27	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/09/18 16:27	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 16:27	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW1D **Lab ID: 10437881002** Collected: 06/29/18 07:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:50	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:50	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:50	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 16:50	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:50	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:50	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:50	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:50	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 16:50	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:50	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:50	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 16:50	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:50	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:50	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:50	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:50	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:50	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:50	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:50	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 16:50	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:50	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 16:50	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 16:50	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 16:50	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 16:50	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:50	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 16:50	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 16:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 16:50	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 16:50	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:50	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 16:50	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:50	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 16:50	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 16:50	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 16:50	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 16:50	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 16:50	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 16:50	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 16:50	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:50	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 16:50	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 16:50	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 16:50	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:50	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW1D **Lab ID: 10437881002** Collected: 06/29/18 07:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 16:50	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 16:50	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 16:50	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 16:50	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:50	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 16:50	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:50	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:50	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:50	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 16:50	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 16:50	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 16:50	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 16:50	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 16:50	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 16:50	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 16:50	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 16:50	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 16:50	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 16:50	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 16:50	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:50	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 16:50	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 16:50	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 16:50	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 16:50	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 16:50	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:50	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:50	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 16:50	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 16:50	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 16:50	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 16:50	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 16:50	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 16:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1		07/09/18 16:50	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1		07/09/18 16:50	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 16:50	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW2D **Lab ID: 10437881003** Collected: 06/29/18 08:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:14	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:14	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:14	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 17:14	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:14	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:14	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:14	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 17:14	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 17:14	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:14	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:14	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 17:14	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 17:14	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:14	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 17:14	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 17:14	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 17:14	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:14	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:14	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 17:14	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:14	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 17:14	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 17:14	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 17:14	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 17:14	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:14	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 17:14	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 17:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 17:14	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 17:14	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 17:14	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 17:14	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 17:14	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 17:14	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 17:14	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 17:14	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 17:14	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 17:14	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 17:14	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 17:14	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:14	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 17:14	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 17:14	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 17:14	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:14	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW2D **Lab ID: 10437881003** Collected: 06/29/18 08:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 17:14	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 17:14	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 17:14	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 17:14	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:14	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:14	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 17:14	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:14	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:14	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 17:14	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 17:14	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 17:14	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:14	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 17:14	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 17:14	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 17:14	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 17:14	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 17:14	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 17:14	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 17:14	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:14	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:14	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 17:14	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 17:14	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 17:14	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:14	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:14	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:14	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 17:14	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 17:14	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:14	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:14	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:14	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 17:14	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/09/18 17:14	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/09/18 17:14	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		07/09/18 17:14	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW18D **Lab ID: 10437881004** Collected: 06/29/18 09:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:37	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:37	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:37	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:37	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 17:37	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:37	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:37	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:37	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 17:37	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 17:37	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:37	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:37	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 17:37	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 17:37	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:37	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 17:37	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 17:37	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 17:37	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:37	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:37	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 17:37	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:37	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 17:37	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 17:37	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 17:37	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 17:37	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:37	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 17:37	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 17:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 17:37	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 17:37	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 17:37	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 17:37	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 17:37	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 17:37	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 17:37	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 17:37	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 17:37	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 17:37	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 17:37	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 17:37	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:37	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 17:37	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 17:37	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 17:37	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:37	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW18D **Lab ID: 10437881004** Collected: 06/29/18 09:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 17:37	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 17:37	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 17:37	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 17:37	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:37	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 17:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 17:37	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:37	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:37	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 17:37	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 17:37	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 17:37	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 17:37	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 17:37	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 17:37	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 17:37	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 17:37	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 17:37	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 17:37	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 17:37	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:37	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 17:37	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 17:37	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 17:37	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 17:37	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 17:37	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:37	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:37	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 17:37	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 17:37	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 17:37	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 17:37	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 17:37	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 17:37	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1		07/09/18 17:37	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/09/18 17:37	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 17:37	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW16D **Lab ID: 10437881005** Collected: 06/29/18 10:25 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:01	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:01	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:01	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 18:01	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:01	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:01	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:01	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 18:01	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 18:01	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:01	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:01	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 18:01	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 18:01	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:01	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 18:01	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 18:01	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 18:01	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:01	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:01	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 18:01	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:01	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 18:01	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 18:01	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 18:01	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 18:01	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:01	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 18:01	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 18:01	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 18:01	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 18:01	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 18:01	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 18:01	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 18:01	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 18:01	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 18:01	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 18:01	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 18:01	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 18:01	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 18:01	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 18:01	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:01	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 18:01	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 18:01	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 18:01	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:01	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW16D **Lab ID: 10437881005** Collected: 06/29/18 10:25 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 18:01	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 18:01	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 18:01	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 18:01	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:01	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:01	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 18:01	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:01	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:01	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 18:01	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 18:01	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 18:01	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:01	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 18:01	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 18:01	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 18:01	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 18:01	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 18:01	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 18:01	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 18:01	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:01	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:01	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 18:01	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 18:01	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 18:01	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:01	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:01	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:01	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 18:01	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 18:01	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:01	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:01	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:01	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 18:01	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-125		1		07/09/18 18:01	17060-07-0	
Toluene-d8 (S)	94	%.	75-125		1		07/09/18 18:01	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 18:01	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW21D **Lab ID: 10437881006** Collected: 06/29/18 11:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:24	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:24	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:24	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:24	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 18:24	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:24	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:24	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:24	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 18:24	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 18:24	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:24	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:24	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 18:24	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 18:24	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:24	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 18:24	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 18:24	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 18:24	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:24	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:24	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 18:24	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:24	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 18:24	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 18:24	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 18:24	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 18:24	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:24	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 18:24	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 18:24	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 18:24	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 18:24	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 18:24	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 18:24	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 18:24	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 18:24	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 18:24	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 18:24	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 18:24	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 18:24	74-83-9	
Carbon disulfide	**0.11J**	ug/L	1.0	0.078	1		07/09/18 18:24	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 18:24	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:24	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 18:24	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 18:24	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 18:24	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:24	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-MW21D **Lab ID: 10437881006** Collected: 06/29/18 11:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 18:24	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 18:24	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 18:24	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 18:24	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:24	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 18:24	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 18:24	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:24	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:24	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 18:24	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 18:24	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 18:24	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 18:24	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 18:24	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 18:24	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 18:24	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 18:24	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 18:24	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 18:24	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 18:24	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:24	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 18:24	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 18:24	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 18:24	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 18:24	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 18:24	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:24	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:24	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 18:24	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 18:24	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 18:24	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 18:24	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 18:24	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 18:24	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1		07/09/18 18:24	17060-07-0	
Toluene-d8 (S)	96	%.	75-125		1		07/09/18 18:24	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		07/09/18 18:24	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-FD5 **Lab ID: 10437881007** Collected: 06/29/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/10/18 00:40	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/10/18 00:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/10/18 00:40	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/10/18 00:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/10/18 00:40	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/10/18 00:40	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/10/18 00:40	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/10/18 00:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/10/18 00:40	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/10/18 00:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/10/18 00:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/10/18 00:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/10/18 00:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/10/18 00:40	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/10/18 00:40	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/10/18 00:40	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/10/18 00:40	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/10/18 00:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/10/18 00:40	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/10/18 00:40	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/10/18 00:40	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/10/18 00:40	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/10/18 00:40	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/10/18 00:40	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/10/18 00:40	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/10/18 00:40	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/10/18 00:40	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/10/18 00:40	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/10/18 00:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/10/18 00:40	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/10/18 00:40	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/10/18 00:40	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/10/18 00:40	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/10/18 00:40	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/10/18 00:40	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/10/18 00:40	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/10/18 00:40	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/10/18 00:40	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/10/18 00:40	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/10/18 00:40	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/10/18 00:40	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/10/18 00:40	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/10/18 00:40	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/10/18 00:40	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/10/18 00:40	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/10/18 00:40	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: 062918-FD5 **Lab ID: 10437881007** Collected: 06/29/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/10/18 00:40	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/10/18 00:40	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/10/18 00:40	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/10/18 00:40	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/10/18 00:40	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/10/18 00:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/10/18 00:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/10/18 00:40	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/10/18 00:40	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/10/18 00:40	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/10/18 00:40	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/10/18 00:40	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/10/18 00:40	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/10/18 00:40	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/10/18 00:40	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/10/18 00:40	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/10/18 00:40	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/10/18 00:40	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/10/18 00:40	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/10/18 00:40	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/10/18 00:40	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/10/18 00:40	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/10/18 00:40	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/10/18 00:40	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/10/18 00:40	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/10/18 00:40	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/10/18 00:40	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/10/18 00:40	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/10/18 00:40	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/10/18 00:40	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/10/18 00:40	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/10/18 00:40	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/10/18 00:40	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/10/18 00:40	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/10/18 00:40	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/10/18 00:40	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		07/10/18 00:40	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437881

Sample: Trip Blank **Lab ID: 10437881008** Collected: 06/29/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:08	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:08	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:08	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:08	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 12:08	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:08	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:08	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:08	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:08	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 12:08	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:08	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:08	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 12:08	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:08	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:08	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:08	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:08	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:08	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:08	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:08	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 12:08	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:08	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 12:08	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 12:08	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 12:08	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 12:08	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:08	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 12:08	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 12:08	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 12:08	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 12:08	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:08	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 12:08	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:08	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 12:08	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 12:08	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 12:08	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 12:08	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 12:08	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 12:08	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/09/18 12:08	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:08	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 12:08	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 12:08	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 12:08	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:08	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Sample: Trip Blank **Lab ID: 10437881008** Collected: 06/29/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 12:08	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 12:08	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 12:08	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 12:08	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:08	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 12:08	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:08	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:08	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:08	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 12:08	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 12:08	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 12:08	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 12:08	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 12:08	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 12:08	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 12:08	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 12:08	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 12:08	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 12:08	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 12:08	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:08	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 12:08	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 12:08	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 12:08	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 12:08	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 12:08	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:08	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:08	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 12:08	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 12:08	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 12:08	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 12:08	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 12:08	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 12:08	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1		07/09/18 12:08	17060-07-0	HS
Toluene-d8 (S)	94	%.	75-125		1		07/09/18 12:08	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/09/18 12:08	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

QC Batch: 549215 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437881001, 10437881002, 10437881003, 10437881004, 10437881005, 10437881006, 10437881008

METHOD BLANK: 2985590 Matrix: Water
Associated Lab Samples: 10437881001, 10437881002, 10437881003, 10437881004, 10437881005, 10437881006, 10437881008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/09/18 11:21	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/09/18 11:21	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/09/18 11:21	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/09/18 11:21	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/09/18 11:21	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/09/18 11:21	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/09/18 11:21	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/09/18 11:21	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/09/18 11:21	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/09/18 11:21	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/09/18 11:21	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/09/18 11:21	
Acetone	ug/L	<9.2	20.0	9.2	07/09/18 11:21	
Acrolein	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/09/18 11:21	
Benzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/09/18 11:21	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
Bromoform	ug/L	<0.80	4.0	0.80	07/09/18 11:21	
Bromomethane	ug/L	<1.8	4.0	1.8	07/09/18 11:21	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/09/18 11:21	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/09/18 11:21	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

METHOD BLANK: 2985590 Matrix: Water

Associated Lab Samples: 10437881001, 10437881002, 10437881003, 10437881004, 10437881005, 10437881006, 10437881008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Chloroethane	ug/L	<0.49	1.0	0.49	07/09/18 11:21	
Chloroform	ug/L	<0.45	1.0	0.45	07/09/18 11:21	
Chloromethane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/09/18 11:21	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/09/18 11:21	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/09/18 11:21	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/09/18 11:21	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/09/18 11:21	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Naphthalene	ug/L	<0.48	1.0	0.48	07/09/18 11:21	
o-Xylene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Styrene	ug/L	<0.19	0.50	0.19	07/09/18 11:21	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/09/18 11:21	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/09/18 11:21	
Toluene	ug/L	<0.083	0.50	0.083	07/09/18 11:21	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/09/18 11:21	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/09/18 11:21	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/09/18 11:21	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/09/18 11:21	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/09/18 11:21	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/09/18 11:21	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/09/18 11:21	
4-Bromofluorobenzene (S)	%.	97	75-125		07/09/18 11:21	
Toluene-d8 (S)	%.	98	75-125		07/09/18 11:21	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	19.3	105	97	75-125	8	30	
1,1,1-Trichloroethane	ug/L	20	21.4	20.3	107	102	75-125	5	30	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	20.7	106	103	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	20.5	20.6	102	103	75-125	1	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	21.2	113	106	72-125	6	30	
1,1-Dichloroethane	ug/L	20	22.1	20.7	110	103	75-125	7	30	
1,1-Dichloroethene	ug/L	20	21.3	21.1	107	105	73-125	1	30	
1,1-Dichloropropene	ug/L	20	21.0	20.0	105	100	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	20.0	21.7	100	109	72-130	8	30	
1,2,3-Trichloropropane	ug/L	20	21.0	21.0	105	105	75-125	0	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	20.5	94	103	75-125	8	30	
1,2,4-Trimethylbenzene	ug/L	20	19.3	18.6	96	93	75-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	45.7	91	91	64-133	1	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	20.9	109	105	75-125	4	30	
1,2-Dichlorobenzene	ug/L	20	19.8	19.3	99	97	75-125	2	30	
1,2-Dichloroethane	ug/L	20	21.3	20.6	107	103	75-125	4	30	
1,2-Dichloroethene (Total)	ug/L	40	42.6	40.8	107	102	75-125	4	30	N2
1,2-Dichloropropane	ug/L	20	21.4	20.5	107	102	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	20	19.3	19.1	96	96	75-125	1	30	
1,3-Dichlorobenzene	ug/L	20	20.6	19.9	103	100	75-125	3	30	
1,3-Dichloropropane	ug/L	20	21.0	20.5	105	103	75-125	2	30	
1,4-Dichlorobenzene	ug/L	20	20.4	19.7	102	99	75-125	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	467	440	117	110	75-125	6	30	
2,2,4-Trimethylpentane	ug/L	20	21.9	22.8	110	114	64-130	4	30	N2
2,2-Dichloropropane	ug/L	20	20.3	19.0	102	95	68-129	6	30	
2-Butanone (MEK)	ug/L	100	125	118	125	118	65-126	6	30	
2-Chlorotoluene	ug/L	20	18.9	17.5	94	88	75-125	7	30	
2-Hexanone	ug/L	100	103	99.4	103	99	75-134	4	30	
4-Chlorotoluene	ug/L	20	19.7	18.7	99	94	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	104	109	104	75-131	4	30	
Acetone	ug/L	100	108	106	108	106	68-150	2	30	
Acrolein	ug/L	200	226	215	113	108	63-149	5	30	
Acrylonitrile	ug/L	200	236	231	118	116	75-125	2	30	
Benzene	ug/L	20	21.5	20.6	107	103	75-125	4	30	
Bromobenzene	ug/L	20	19.7	19.1	98	96	75-125	3	30	
Bromochloromethane	ug/L	20	21.9	21.1	109	105	75-125	4	30	
Bromodichloromethane	ug/L	20	21.1	20.2	105	101	75-125	4	30	
Bromoform	ug/L	20	18.8	18.2	94	91	70-125	3	30	
Bromomethane	ug/L	20	12.7	12.6	63	63	30-145	1	30	
Carbon disulfide	ug/L	20	19.5	19.0	98	95	67-125	3	30	
Carbon tetrachloride	ug/L	20	21.1	19.7	106	98	75-125	7	30	
Chlorobenzene	ug/L	20	20.3	19.3	102	96	75-125	5	30	
Chloroethane	ug/L	20	22.5	21.9	113	110	73-131	3	30	
Chloroform	ug/L	20	21.7	20.5	109	102	75-125	6	30	
Chloromethane	ug/L	20	17.2	16.5	86	82	52-132	4	30	
cis-1,2-Dichloroethene	ug/L	20	21.2	20.2	106	101	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	20	20.1	18.9	100	94	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	20.5	19.6	103	98	75-125	5	30	
Dibromomethane	ug/L	20	21.2	20.6	106	103	75-125	3	30	
Dichlorodifluoromethane	ug/L	20	20.6	20.2	103	101	64-127	2	30	
Dichlorofluoromethane	ug/L	20	21.3	20.7	107	103	75-125	3	30	N2
Diisopropyl ether	ug/L	20	22.2	21.1	111	106	75-125	5	30	
Ethyl-tert-butyl ether	ug/L	20	20.2	19.6	101	98	75-125	3	30	
Ethylbenzene	ug/L	20	20.5	19.1	103	95	75-125	7	30	
Hexachloro-1,3-butadiene	ug/L	20	21.5	24.1	108	120	75-130	11	30	
Isopropylbenzene (Cumene)	ug/L	20	20.3	18.6	102	93	75-125	9	30	
m&p-Xylene	ug/L	40	41.4	38.4	104	96	75-125	8	30	
Methyl-tert-butyl ether	ug/L	20	20.1	19.4	101	97	75-125	4	30	
Methylene Chloride	ug/L	20	21.1	20.4	105	102	72-125	3	30	
n-Butylbenzene	ug/L	20	20.7	21.1	104	105	75-125	2	30	
n-Propylbenzene	ug/L	20	19.8	18.6	99	93	75-125	6	30	
Naphthalene	ug/L	20	17.7	18.3	88	91	61-136	3	30	
o-Xylene	ug/L	20	19.5	18.8	98	94	75-125	4	30	
p-Isopropyltoluene	ug/L	20	19.2	19.5	96	98	75-125	2	30	
sec-Butylbenzene	ug/L	20	19.8	19.5	99	97	75-125	2	30	
Styrene	ug/L	20	20.3	19.1	101	96	75-125	6	30	
tert-Amylmethyl ether	ug/L	20	18.8	18.0	94	90	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	246	232	123	116	75-125	6	30	
tert-Butylbenzene	ug/L	20	18.8	18.4	94	92	75-125	2	30	
Tetrachloroethene	ug/L	20	21.0	19.8	105	99	75-125	6	30	
Tetrahydrofuran	ug/L	200	201	195	100	97	64-150	3	30	
Toluene	ug/L	20	20.1	19.0	101	95	75-125	6	30	
trans-1,2-Dichloroethene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	20	21.0	20.2	105	101	75-125	4	30	
trans-1,4-Dichloro-2-butene	ug/L	50.2	46.3	46.1	92	92	57-126	0	30	
Trichloroethene	ug/L	20	21.8	20.5	109	102	75-125	6	30	
Trichlorofluoromethane	ug/L	20	21.3	20.3	106	102	74-126	5	30	
Vinyl acetate	ug/L	20	21.0	20.4	105	102	72-129	3	30	
Vinyl chloride	ug/L	20	21.3	20.7	107	104	71-130	3	30	
Xylene (Total)	ug/L	60	60.9	57.1	102	95	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.				103	104	75-125			
4-Bromofluorobenzene (S)	%.				94	96	75-125			
Toluene-d8 (S)	%.				97	99	75-125			

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.2	91	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	20.9	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.4	97	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.4	112	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	20.3	101	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	21.8	109	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.7	103	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	19.0	95	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.6	93	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	17.7	88	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.4	87	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.2	101	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	17.8	89	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	19.6	98	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40.4	101	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	19.7	98	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.0	90	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	18.6	93	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	19.2	96	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	18.4	92	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	411	103	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	21.8	109	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	19.5	97	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	114	114	59-125	
2-Chlorotoluene	ug/L	<0.16	20	17.0	85	73-126	
2-Hexanone	ug/L	<0.88	100	96.3	96	68-138	
4-Chlorotoluene	ug/L	<0.13	20	17.7	89	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	93.9	94	75-150	
Acrolein	ug/L	<1.2	200	208	104	53-150	
Acrylonitrile	ug/L	<0.91	200	209	104	69-127	
Benzene	ug/L	<0.10	20	20.2	101	74-125	
Bromobenzene	ug/L	<0.21	20	18.2	91	75-125	
Bromochloromethane	ug/L	<0.27	20	20.0	100	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.4	97	75-125	
Bromoform	ug/L	<0.80	20	16.9	84	68-125	
Bromomethane	ug/L	<1.8	20	13.2	66	37-149	
Carbon disulfide	ug/L	0.54J	20	19.5	95	66-139	
Carbon tetrachloride	ug/L	584	20	680	483	75-127	E,M1
Chlorobenzene	ug/L	<0.17	20	18.6	93	75-125	
Chloroethane	ug/L	<0.49	20	20.5	103	73-134	
Chloroform	ug/L	16.7	20	35.8	95	71-125	
Chloromethane	ug/L	<0.16	20	14.8	74	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	17.9	89	71-125	
Dibromochloromethane	ug/L	<0.12	20	19.1	95	75-125	
Dibromomethane	ug/L	<0.16	20	19.9	100	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	19.5	98	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	19.2	96	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	20.2	101	66-131	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	18.3	91	74-125	
Ethylbenzene	ug/L	<0.14	20	18.5	93	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	22.5	112	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.5	92	75-125	
m&p-Xylene	ug/L	<0.31	40	37.1	93	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	18.9	95	75-125	
Methylene Chloride	ug/L	<0.98	20	18.3	91	72-125	
n-Butylbenzene	ug/L	<0.24	20	20.1	101	73-140	
n-Propylbenzene	ug/L	<0.10	20	17.9	89	75-126	
Naphthalene	ug/L	<0.48	20	17.5	87	61-136	
o-Xylene	ug/L	<0.16	20	18.6	93	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.5	87	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.4	92	75-132	
Styrene	ug/L	<0.19	20	18.5	92	71-125	
tert-Amylmethyl ether	ug/L	<0.11	20	17.5	88	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	217	109	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.6	88	75-126	
Tetrachloroethene	ug/L	<0.17	20	20.2	101	75-125	
Tetrahydrofuran	ug/L	<2.2	200	178	89	75-150	
Toluene	ug/L	<0.083	20	18.7	93	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20.5	102	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	19.0	95	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	42.5	85	57-125	
Trichloroethene	ug/L	<0.15	20	20.3	101	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	19.5	98	75-135	
Vinyl acetate	ug/L	<1.1	20	21.1	105	57-136	
Vinyl chloride	ug/L	<0.092	20	20.2	101	74-141	
Xylene (Total)	ug/L	<0.31	60	55.7	93	75-125	
1,2-Dichloroethane-d4 (S)	%.				108	75-125	
4-Bromofluorobenzene (S)	%.				94	75-125	
Toluene-d8 (S)	%.				96	75-125	

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	10J	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	0.15J	0.15J		30	
Carbon tetrachloride	ug/L	<0.19	<0.19		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	108	2		
4-Bromofluorobenzene (S)	%.	95	96	1		
Toluene-d8 (S)	%.	97	97	1		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

QC Batch: 549236 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437881007

METHOD BLANK: 2985690 | Matrix: Water
Associated Lab Samples: 10437881007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/09/18 23:06	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/09/18 23:06	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/09/18 23:06	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/09/18 23:06	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/09/18 23:06	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/09/18 23:06	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/09/18 23:06	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 23:06	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/09/18 23:06	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/09/18 23:06	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/09/18 23:06	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/09/18 23:06	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/09/18 23:06	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/09/18 23:06	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/09/18 23:06	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/09/18 23:06	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/09/18 23:06	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/09/18 23:06	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/09/18 23:06	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/09/18 23:06	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/09/18 23:06	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 23:06	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/09/18 23:06	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/09/18 23:06	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/09/18 23:06	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/09/18 23:06	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/09/18 23:06	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/09/18 23:06	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/09/18 23:06	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/09/18 23:06	
Acetone	ug/L	<9.2	20.0	9.2	07/09/18 23:06	
Acrolein	ug/L	<1.2	10.0	1.2	07/09/18 23:06	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/09/18 23:06	
Benzene	ug/L	<0.10	0.50	0.10	07/09/18 23:06	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/09/18 23:06	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/09/18 23:06	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/09/18 23:06	
Bromoform	ug/L	<0.80	4.0	0.80	07/09/18 23:06	
Bromomethane	ug/L	<1.8	4.0	1.8	07/09/18 23:06	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/09/18 23:06	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/09/18 23:06	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

METHOD BLANK: 2985690 Matrix: Water
Associated Lab Samples: 10437881007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 23:06	
Chloroethane	ug/L	<0.49	1.0	0.49	07/09/18 23:06	
Chloroform	ug/L	<0.45	1.0	0.45	07/09/18 23:06	
Chloromethane	ug/L	<0.16	4.0	0.16	07/09/18 23:06	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/09/18 23:06	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 23:06	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/09/18 23:06	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/09/18 23:06	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/09/18 23:06	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/09/18 23:06	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/09/18 23:06	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/09/18 23:06	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/09/18 23:06	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/09/18 23:06	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/09/18 23:06	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/09/18 23:06	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/09/18 23:06	
Methylene Chloride	ug/L	1.9J	4.0	0.98	07/09/18 23:06	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/09/18 23:06	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/09/18 23:06	
Naphthalene	ug/L	<0.48	1.0	0.48	07/09/18 23:06	
o-Xylene	ug/L	<0.16	0.50	0.16	07/09/18 23:06	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/09/18 23:06	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 23:06	
Styrene	ug/L	<0.19	0.50	0.19	07/09/18 23:06	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/09/18 23:06	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/09/18 23:06	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 23:06	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/09/18 23:06	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/09/18 23:06	
Toluene	ug/L	<0.083	0.50	0.083	07/09/18 23:06	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/09/18 23:06	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/09/18 23:06	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/09/18 23:06	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/09/18 23:06	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/09/18 23:06	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/09/18 23:06	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/09/18 23:06	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/09/18 23:06	
1,2-Dichloroethane-d4 (S)	%.	108	75-125		07/09/18 23:06	
4-Bromofluorobenzene (S)	%.	96	75-125		07/09/18 23:06	
Toluene-d8 (S)	%.	97	75-125		07/09/18 23:06	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

LABORATORY CONTROL SAMPLE & LCSD: 2985691 2985763

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	19.6	103	98	75-125	5	30	
1,1,1-Trichloroethane	ug/L	20	21.9	21.3	109	107	75-125	2	30	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	20.6	106	103	75-125	3	30	
1,1,2-Trichloroethane	ug/L	20	21.2	21.1	106	105	75-125	0	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	23.3	22.2	117	111	72-125	5	30	
1,1-Dichloroethane	ug/L	20	23.1	22.5	115	112	75-125	3	30	
1,1-Dichloroethene	ug/L	20	22.2	22.1	111	110	73-125	1	30	
1,1-Dichloropropene	ug/L	20	21.9	20.9	109	104	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	19.5	20.9	97	105	72-130	7	30	
1,2,3-Trichloropropane	ug/L	20	20.5	20.6	103	103	75-125	0	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	18.9	94	95	75-125	0	30	
1,2,4-Trimethylbenzene	ug/L	20	19.9	19.2	100	96	75-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	43.6	85	87	64-133	2	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	21.3	109	107	75-125	2	30	
1,2-Dichlorobenzene	ug/L	20	20.1	19.8	100	99	75-125	2	30	
1,2-Dichloroethane	ug/L	20	22.3	21.6	112	108	75-125	3	30	
1,2-Dichloroethene (Total)	ug/L	40	43.6	42.9	109	107	75-125	2	30	N2
1,2-Dichloropropane	ug/L	20	21.7	21.2	109	106	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	20	19.9	18.8	100	94	75-125	6	30	
1,3-Dichlorobenzene	ug/L	20	20.9	20.2	105	101	75-125	4	30	
1,3-Dichloropropane	ug/L	20	21.5	20.8	108	104	75-125	3	30	
1,4-Dichlorobenzene	ug/L	20	21.0	20.5	105	102	75-125	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	461	438	115	110	75-125	5	30	
2,2,4-Trimethylpentane	ug/L	20	21.6	20.9	108	104	64-130	3	30	N2
2,2-Dichloropropane	ug/L	20	18.6	18.3	93	92	68-129	1	30	
2-Butanone (MEK)	ug/L	100	122	125	122	125	65-126	2	30	
2-Chlorotoluene	ug/L	20	20.1	18.5	101	93	75-125	8	30	
2-Hexanone	ug/L	100	106	104	106	104	75-134	2	30	
4-Chlorotoluene	ug/L	20	20.3	19.1	101	96	75-125	6	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	107	108	107	75-131	0	30	
Acetone	ug/L	100	110	108	110	108	68-150	1	30	
Acrolein	ug/L	200	230	232	115	116	63-149	1	30	
Acrylonitrile	ug/L	200	243	243	122	122	75-125	0	30	
Benzene	ug/L	20	22.3	21.7	112	109	75-125	3	30	
Bromobenzene	ug/L	20	20.4	19.9	102	100	75-125	3	30	
Bromochloromethane	ug/L	20	22.3	21.7	111	109	75-125	2	30	
Bromodichloromethane	ug/L	20	20.4	20.0	102	100	75-125	2	30	
Bromoform	ug/L	20	16.4	17.2	82	86	70-125	5	30	
Bromomethane	ug/L	20	15.5	16.7	77	83	30-145	7	30	
Carbon disulfide	ug/L	20	18.8	18.5	94	92	67-125	2	30	
Carbon tetrachloride	ug/L	20	21.3	20.5	107	103	75-125	4	30	
Chlorobenzene	ug/L	20	21.3	19.9	106	100	75-125	7	30	
Chloroethane	ug/L	20	24.5	23.6	122	118	73-131	3	30	
Chloroform	ug/L	20	22.6	21.8	113	109	75-125	3	30	
Chloromethane	ug/L	20	19.5	19.0	97	95	52-132	2	30	
cis-1,2-Dichloroethene	ug/L	20	21.9	21.8	110	109	75-125	1	30	
cis-1,3-Dichloropropene	ug/L	20	18.8	18.5	94	93	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

LABORATORY CONTROL SAMPLE & LCSD: 2985691 2985763

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	19.7	19.1	98	96	75-125	3	30	
Dibromomethane	ug/L	20	21.2	21.0	106	105	75-125	1	30	
Dichlorodifluoromethane	ug/L	20	21.7	20.8	108	104	64-127	4	30	
Dichlorofluoromethane	ug/L	20	22.7	22.3	114	111	75-125	2	30	N2
Diisopropyl ether	ug/L	20	22.9	22.5	115	112	75-125	2	30	
Ethyl-tert-butyl ether	ug/L	20	20.4	20.3	102	102	75-125	0	30	
Ethylbenzene	ug/L	20	21.1	20.1	105	100	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	20	18.9	21.2	94	106	75-130	12	30	
Isopropylbenzene (Cumene)	ug/L	20	20.9	19.4	105	97	75-125	8	30	
m&p-Xylene	ug/L	40	43.3	39.9	108	100	75-125	8	30	
Methyl-tert-butyl ether	ug/L	20	20.2	20.4	101	102	75-125	1	30	
Methylene Chloride	ug/L	20	22.2	21.3	111	106	72-125	4	30	
n-Butylbenzene	ug/L	20	20.3	20.1	102	101	75-125	1	30	
n-Propylbenzene	ug/L	20	20.3	19.4	101	97	75-125	4	30	
Naphthalene	ug/L	20	17.5	18.7	87	93	61-136	7	30	
o-Xylene	ug/L	20	21.2	20.1	106	101	75-125	5	30	
p-Isopropyltoluene	ug/L	20	19.9	19.5	100	98	75-125	2	30	
sec-Butylbenzene	ug/L	20	20.2	19.2	101	96	75-125	5	30	
Styrene	ug/L	20	21.2	19.8	106	99	75-125	7	30	
tert-Amylmethyl ether	ug/L	20	18.9	18.8	94	94	75-125	1	30	
tert-Butyl Alcohol	ug/L	200	239	234	120	117	75-125	2	30	
tert-Butylbenzene	ug/L	20	19.4	18.6	97	93	75-125	4	30	
Tetrachloroethene	ug/L	20	21.6	20.3	108	102	75-125	6	30	
Tetrahydrofuran	ug/L	200	206	195	103	97	64-150	6	30	
Toluene	ug/L	20	20.3	19.7	102	98	75-125	3	30	
trans-1,2-Dichloroethene	ug/L	20	21.7	21.1	108	106	75-125	3	30	
trans-1,3-Dichloropropene	ug/L	20	20.0	19.6	100	98	75-125	2	30	
trans-1,4-Dichloro-2-butene	ug/L	50.2	41.2	41.6	82	83	57-126	1	30	
Trichloroethene	ug/L	20	22.4	21.9	112	110	75-125	2	30	
Trichlorofluoromethane	ug/L	20	22.7	21.8	113	109	74-126	4	30	
Vinyl acetate	ug/L	20	20.1	19.8	100	99	72-129	1	30	
Vinyl chloride	ug/L	20	23.3	22.0	117	110	71-130	6	30	
Xylene (Total)	ug/L	60	64.4	60.1	107	100	75-125	7	30	
1,2-Dichloroethane-d4 (S)	%.				108	107	75-125			
4-Bromofluorobenzene (S)	%.				93	94	75-125			
Toluene-d8 (S)	%.				100	97	75-125			

MATRIX SPIKE SAMPLE: 2985764

Parameter	Units	12111332001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	18.1	91	75-125	
1,1,1-Trichloroethane	ug/L	ND	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.4	97	75-125	
1,1,2-Trichloroethane	ug/L	ND	20	18.4	92	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	21.7	108	75-136	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

MATRIX SPIKE SAMPLE: 2985764

Parameter	Units	12111332001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	ND	20	20.6	103	75-125	
1,1-Dichloroethene	ug/L	ND	20	21.2	106	75-127	
1,1-Dichloropropene	ug/L	ND	20	20.4	102	75-129	
1,2,3-Trichlorobenzene	ug/L	ND	20	20.0	100	72-137	
1,2,3-Trichloropropane	ug/L	ND	20	18.4	92	75-125	
1,2,4-Trichlorobenzene	ug/L	ND	20	18.1	90	69-131	
1,2,4-Trimethylbenzene	ug/L	ND	20	17.7	89	71-125	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	41.8	84	61-127	
1,2-Dibromoethane (EDB)	ug/L	ND	20	18.9	94	75-125	
1,2-Dichlorobenzene	ug/L	ND	20	18.0	90	75-125	
1,2-Dichloroethane	ug/L	ND	20	19.2	96	69-125	
1,2-Dichloroethene (Total)	ug/L	ND	40	39.9	100	75-125	N2
1,2-Dichloropropane	ug/L	ND	20	19.1	95	75-125	
1,3,5-Trimethylbenzene	ug/L	ND	20	18.1	90	75-125	
1,3-Dichlorobenzene	ug/L	ND	20	18.8	94	75-125	
1,3-Dichloropropane	ug/L	ND	20	18.7	93	75-125	
1,4-Dichlorobenzene	ug/L	ND	20	18.6	93	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	393	98	67-128	
2,2,4-Trimethylpentane	ug/L	ND	20	19.4	97	65-150	N2
2,2-Dichloropropane	ug/L	ND	20	17.0	85	65-136	
2-Butanone (MEK)	ug/L	ND	100	119	119	59-125	
2-Chlorotoluene	ug/L	ND	20	17.6	88	73-126	
2-Hexanone	ug/L	ND	100	95.0	95	68-138	
4-Chlorotoluene	ug/L	ND	20	18.3	91	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	99.5	100	73-125	
Acetone	ug/L	ND	100	104	91	75-150	
Acrolein	ug/L	ND	200	194	97	53-150	
Acrylonitrile	ug/L	ND	200	215	108	69-127	
Benzene	ug/L	ND	20	20.2	101	74-125	
Bromobenzene	ug/L	ND	20	17.6	88	75-125	
Bromochloromethane	ug/L	ND	20	19.7	98	75-125	
Bromodichloromethane	ug/L	0.97	20	19.2	91	75-125	
Bromoform	ug/L	ND	20	15.3	76	68-125	
Bromomethane	ug/L	ND	20	16.1	80	37-149	
Carbon disulfide	ug/L	ND	20	18.1	90	66-139	
Carbon tetrachloride	ug/L	ND	20	19.4	97	75-127	
Chlorobenzene	ug/L	ND	20	18.6	93	75-125	
Chloroethane	ug/L	ND	20	21.6	108	73-134	
Chloroform	ug/L	2.2	20	22.1	100	71-125	
Chloromethane	ug/L	ND	20	18.4	92	58-133	
cis-1,2-Dichloroethene	ug/L	ND	20	19.7	99	75-125	
cis-1,3-Dichloropropene	ug/L	ND	20	16.1	80	71-125	
Dibromochloromethane	ug/L	ND	20	17.6	86	75-125	
Dibromomethane	ug/L	ND	20	18.5	92	75-125	
Dichlorodifluoromethane	ug/L	ND	20	20.3	102	70-150	
Dichlorofluoromethane	ug/L	ND	20	20.5	103	75-126	N2
Diisopropyl ether	ug/L	ND	20	20.0	100	66-131	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

MATRIX SPIKE SAMPLE: 2985764

Parameter	Units	12111332001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	ND	20	17.7	89	74-125	
Ethylbenzene	ug/L	ND	20	18.9	95	75-125	
Hexachloro-1,3-butadiene	ug/L	ND	20	20.4	102	60-150	
Isopropylbenzene (Cumene)	ug/L	ND	20	18.9	95	75-125	
m&p-Xylene	ug/L	ND	40	38.3	96	75-125	
Methyl-tert-butyl ether	ug/L	ND	20	17.9	90	75-125	
Methylene Chloride	ug/L	ND	20	18.8	94	72-125	
n-Butylbenzene	ug/L	ND	20	19.2	96	73-140	
n-Propylbenzene	ug/L	ND	20	18.4	92	75-126	
Naphthalene	ug/L	ND	20	19.5	97	61-136	
o-Xylene	ug/L	ND	20	18.1	90	75-125	
p-Isopropyltoluene	ug/L	ND	20	18.4	92	73-133	
sec-Butylbenzene	ug/L	ND	20	18.7	94	75-132	
Styrene	ug/L	ND	20	18.5	93	71-125	
tert-Amylmethyl ether	ug/L	ND	20	16.4	82	71-125	
tert-Butyl Alcohol	ug/L	ND	200	208	104	72-130	
tert-Butylbenzene	ug/L	ND	20	17.8	89	75-126	
Tetrachloroethene	ug/L	ND	20	19.7	98	75-125	
Tetrahydrofuran	ug/L	ND	200	166	83	75-150	
Toluene	ug/L	ND	20	18.5	93	74-125	
trans-1,2-Dichloroethene	ug/L	ND	20	20.2	101	75-125	
trans-1,3-Dichloropropene	ug/L	ND	20	17.4	87	70-125	
trans-1,4-Dichloro-2-butene	ug/L	ND	50.2	37.7	75	57-125	
Trichloroethene	ug/L	ND	20	20.1	100	75-125	
Trichlorofluoromethane	ug/L	ND	20	21.2	106	75-135	
Vinyl acetate	ug/L	ND	20	18.0	90	57-136	
Vinyl chloride	ug/L	ND	20	21.5	107	74-141	
Xylene (Total)	ug/L	ND	60	56.4	94	75-125	
1,2-Dichloroethane-d4 (S)	%.				106	75-125	
4-Bromofluorobenzene (S)	%.				93	75-125	
Toluene-d8 (S)	%.				98	75-125	

SAMPLE DUPLICATE: 2985765

Parameter	Units	10438732001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	<0.20		30	
1,1,1-Trichloroethane	ug/L	ND	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	<0.17		30	
1,1,2-Trichloroethane	ug/L	ND	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	<0.22		30	
1,1-Dichloroethane	ug/L	ND	<0.17		30	
1,1-Dichloroethene	ug/L	ND	<0.16		30	
1,1-Dichloropropene	ug/L	ND	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	ND	<0.21		30	
1,2,3-Trichloropropane	ug/L	ND	<0.26		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

SAMPLE DUPLICATE: 2985765

Parameter	Units	10438732001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	ND	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	ND	<0.24		30	
1,2-Dichlorobenzene	ug/L	ND	<0.14		30	
1,2-Dichloroethane	ug/L	ND	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	ND	<0.27		30	N2
1,2-Dichloropropane	ug/L	ND	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	ND	<0.12		30	
1,3-Dichlorobenzene	ug/L	ND	<0.16		30	
1,3-Dichloropropane	ug/L	ND	<0.070		30	
1,4-Dichlorobenzene	ug/L	ND	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	<16.3		30	
2,2,4-Trimethylpentane	ug/L	ND	<0.19		30	N2
2,2-Dichloropropane	ug/L	ND	<0.17		30	
2-Butanone (MEK)	ug/L	ND	<0.99		30	
2-Chlorotoluene	ug/L	ND	<0.16		30	
2-Hexanone	ug/L	ND	<0.88		30	
4-Chlorotoluene	ug/L	ND	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	<0.42		30	
Acetone	ug/L	31.6	31.0	2	30	
Acrolein	ug/L	ND	<1.2		30	
Acrylonitrile	ug/L	ND	<0.91		30	
Benzene	ug/L	ND	<0.10		30	
Bromobenzene	ug/L	ND	<0.21		30	
Bromochloromethane	ug/L	ND	<0.27		30	
Bromodichloromethane	ug/L	ND	<0.22		30	
Bromoform	ug/L	ND	<0.80		30	
Bromomethane	ug/L	ND	<1.8		30	
Carbon disulfide	ug/L	ND	<0.078		30	
Carbon tetrachloride	ug/L	ND	<0.19		30	
Chlorobenzene	ug/L	ND	<0.17		30	
Chloroethane	ug/L	ND	<0.49		30	
Chloroform	ug/L	ND	<0.45		30	
Chloromethane	ug/L	ND	<0.16		30	
cis-1,2-Dichloroethene	ug/L	ND	<0.15		30	
cis-1,3-Dichloropropene	ug/L	ND	<0.20		30	
Dibromochloromethane	ug/L	ND	<0.12		30	
Dibromomethane	ug/L	ND	<0.16		30	
Dichlorodifluoromethane	ug/L	ND	<0.23		30	
Dichlorofluoromethane	ug/L	ND	<0.14		30	N2
Diisopropyl ether	ug/L	ND	<0.13		30	
Ethyl-tert-butyl ether	ug/L	ND	<0.18		30	
Ethylbenzene	ug/L	ND	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	ND	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	ND	<0.18		30	
m&p-Xylene	ug/L	ND	<0.31		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

SAMPLE DUPLICATE: 2985765

Parameter	Units	10438732001 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	ND	<0.16		30	
Methylene Chloride	ug/L	ND	<0.98		30	
n-Butylbenzene	ug/L	ND	<0.24		30	
n-Propylbenzene	ug/L	ND	<0.10		30	
Naphthalene	ug/L	ND	<0.48		30	
o-Xylene	ug/L	ND	<0.16		30	
p-Isopropyltoluene	ug/L	ND	<0.15		30	
sec-Butylbenzene	ug/L	ND	<0.15		30	
Styrene	ug/L	ND	<0.19		30	
tert-Amylmethyl ether	ug/L	ND	<0.11		30	
tert-Butyl Alcohol	ug/L	ND	<1.2		30	
tert-Butylbenzene	ug/L	ND	<0.15		30	
Tetrachloroethene	ug/L	ND	<0.17		30	
Tetrahydrofuran	ug/L	ND	<2.2		30	
Toluene	ug/L	ND	0.15J		30	
trans-1,2-Dichloroethene	ug/L	ND	<0.12		30	
trans-1,3-Dichloropropene	ug/L	ND	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	<2.0		30	
Trichloroethene	ug/L	ND	<0.15		30	
Trichlorofluoromethane	ug/L	ND	<0.23		30	
Vinyl acetate	ug/L	ND	<1.1		30	
Vinyl chloride	ug/L	ND	<0.092		30	
Xylene (Total)	ug/L	ND	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	108	107	0		
4-Bromofluorobenzene (S)	%.	97	97	0		
Toluene-d8 (S)	%.	99	96	3		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 549215

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 549236

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437881

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437881001	**062918-MW3D**	EPA 8260B	549215		
10437881002	**062918-MW1D**	EPA 8260B	549215		
10437881003	**062918-MW2D**	EPA 8260B	549215		
10437881004	**062918-MW18D**	EPA 8260B	549215		
10437881005	**062918-MW16D**	EPA 8260B	549215		
10437881006	**062918-MW21D**	EPA 8260B	549215		
10437881007	**062918-FD5**	EPA 8260B	549236		
10437881008	**Trip Blank**	EPA 8260B	549215		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location

WO# : 10437881

10437881

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
																		Y											
1	062918-MW3D	WT	G	6/29	630	—	—	—	3				X				X												001
2	062918-MW1D	↓	↓	↓	730	↓	↓	↓	3				X				X												002
3	062918-MW2D	↓	↓	↓	830	↓	↓	↓	3				X				X												003
4	062918-MW18D	↓	↓	↓	930	↓	↓	↓	3				X				X												004
5	062918-MW16D	↓	↓	↓	1025	↓	↓	↓	3				X				X												005
6	062918-MW21D	↓	↓	↓	1115	↓	↓	↓	3				X				X												006
7	062918-FD5	↓	↓	↓	1600	↓	↓	↓	3				X				X												007
8	Trip Blank	WT	—	—	—	—	—	—	2				X				X												008
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jonathan Jacobs	6/29/18		[signature] Pace	6/30/18	930	2.1	Y	Y	Y
*Field filtered by client							3.1			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 6/29/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR-CH2M H.T)

Project #:

WO# : 10437881

PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Optional: Proj. Due Date: Proj. Name:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1033 2391, 2406

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.0, 3.3 **Cooler Temp Corrected (°C):** 2.1, 3.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** EM 6/28/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. NO MS/MSD Requested
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS. Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: ___ Lot # of added preservative: ___
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 150954				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1505	Temp: 2.1, 3.4	Corrected Temp:
Time: 1525	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062918-MW30	0	2	1	3
" ~~-MW 2d~~ MW2d 6/29/18	0	3	0	3
" -MW18	0	1	2	3
" -MW16D	0	2	1	3
" -MW21D	2	1	0	3
" -FDS	0	1	2	3
TB	1	1	0	2

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July 17, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437886001	**062618-MW6s**	Water	06/26/18 12:15	06/30/18 09:30
10437886002	**062618-MW11s**	Water	06/26/18 12:45	06/30/18 09:30
10437886003	**062618-MW10s**	Water	06/26/18 13:20	06/30/18 09:30
10437886004	**062618-MW12s**	Water	06/26/18 13:45	06/30/18 09:30
10437886005	**062618-MW8s**	Water	06/26/18 14:10	06/30/18 09:30
10437886006	**062618-MW9s**	Water	06/26/18 14:30	06/30/18 09:30
10437886007	**062618-MW7s**	Water	06/26/18 15:45	06/30/18 09:30
10437886008	**062618-MW1s**	Water	06/26/18 16:00	06/30/18 09:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437886001	**062618-MW6s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886002	**062618-MW11s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886003	**062618-MW10s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886004	**062618-MW12s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
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Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886005	**062618-MW8s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886006	**062618-MW9s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886007	**062618-MW7s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10437886008	**062618-MW1s**	RSK 175	MJL	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437886001	**062618-MW6s**					
EPA 6010D	Barium, Dissolved	34.7	ug/L	10.0	07/09/18 15:25	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	07/09/18 15:25	
EPA 6010D	Calcium, Dissolved	33500	ug/L	500	07/09/18 15:25	
EPA 6010D	Chromium, Dissolved	0.64J	ug/L	10.0	07/09/18 15:25	
EPA 6010D	Cobalt, Dissolved	0.78J	ug/L	10.0	07/09/18 15:25	
EPA 6010D	Iron, Dissolved	6.7J	ug/L	50.0	07/09/18 15:25	B
EPA 6010D	Magnesium, Dissolved	9550	ug/L	500	07/09/18 15:25	
EPA 6010D	Manganese, Dissolved	0.61J	ug/L	5.0	07/09/18 15:25	
EPA 6010D	Potassium, Dissolved	408J	ug/L	2500	07/09/18 15:25	
EPA 6010D	Sodium, Dissolved	10600	ug/L	1000	07/09/18 15:25	
EPA 6010D	Vanadium, Dissolved	4.1J	ug/L	15.0	07/09/18 15:25	
EPA 6010D	Zinc, Dissolved	7.7J	ug/L	20.0	07/09/18 15:25	
SM 2320B	Alkalinity, Total as CaCO3	147	mg/L	5.0	07/10/18 09:01	M1
SM 2540C	Total Dissolved Solids	192	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	1.4	mg/L	1.2	07/01/18 07:50	
EPA 300.0	Nitrate as N	0.22	mg/L	0.10	07/01/18 07:50	H3
EPA 300.0	Sulfate	1.6	mg/L	1.2	07/01/18 07:50	
EPA 353.2	Nitrogen, NO2 plus NO3	0.29	mg/L	0.10	07/11/18 12:46	
SM 5310C	Total Organic Carbon	1.5	mg/L	1.0	07/07/18 03:17	B
10437886002	**062618-MW11s**					
EPA 6010D	Aluminum, Dissolved	58.1J	ug/L	200	07/09/18 15:33	
EPA 6010D	Barium, Dissolved	46.4	ug/L	10.0	07/09/18 15:33	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	07/09/18 15:33	
EPA 6010D	Calcium, Dissolved	44400	ug/L	500	07/09/18 15:33	
EPA 6010D	Iron, Dissolved	60.8	ug/L	50.0	07/09/18 15:33	B
EPA 6010D	Magnesium, Dissolved	12800	ug/L	500	07/09/18 15:33	
EPA 6010D	Manganese, Dissolved	24.6	ug/L	5.0	07/09/18 15:33	
EPA 6010D	Potassium, Dissolved	600J	ug/L	2500	07/09/18 15:33	
EPA 6010D	Sodium, Dissolved	17900	ug/L	1000	07/09/18 15:33	
EPA 6010D	Vanadium, Dissolved	6.8J	ug/L	15.0	07/09/18 15:33	
EPA 6010D	Zinc, Dissolved	10.0J	ug/L	20.0	07/09/18 15:33	
SM 2320B	Alkalinity, Total as CaCO3	213	mg/L	5.0	07/10/18 09:16	
SM 2540C	Total Dissolved Solids	232	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	1.2J	mg/L	1.2	07/01/18 08:05	FS
EPA 300.0	Nitrate as N	0.063J	mg/L	0.10	07/01/18 08:05	FS,H3
EPA 300.0	Sulfate	3.1	mg/L	1.2	07/01/18 08:05	FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.061J	mg/L	0.10	07/11/18 12:47	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	07/07/18 03:34	B
10437886003	**062618-MW10s**					
EPA 6010D	Barium, Dissolved	29.9	ug/L	10.0	07/09/18 15:35	
EPA 6010D	Calcium, Dissolved	71800	ug/L	500	07/09/18 15:35	
EPA 6010D	Cobalt, Dissolved	0.79J	ug/L	10.0	07/09/18 15:35	
EPA 6010D	Copper, Dissolved	4.0J	ug/L	10.0	07/09/18 15:35	
EPA 6010D	Magnesium, Dissolved	20500	ug/L	500	07/09/18 15:35	
EPA 6010D	Manganese, Dissolved	2.2J	ug/L	5.0	07/09/18 15:35	
EPA 6010D	Sodium, Dissolved	12900	ug/L	1000	07/09/18 15:35	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437886003	**062618-MW10s**					
EPA 6010D	Vanadium, Dissolved	2.8J	ug/L	15.0	07/09/18 15:35	
EPA 6010D	Zinc, Dissolved	23.5	ug/L	20.0	07/09/18 15:35	
SM 2320B	Alkalinity, Total as CaCO3	304	mg/L	5.0	07/10/18 09:37	
SM 2540C	Total Dissolved Solids	332	mg/L	20.0	07/03/18 14:32	
EPA 300.0	Chloride	0.73J	mg/L	1.2	07/01/18 08:21	
EPA 300.0	Nitrate as N	0.11	mg/L	0.10	07/01/18 08:21	H3
EPA 300.0	Sulfate	1.9	mg/L	1.2	07/01/18 08:21	
EPA 353.2	Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	07/11/18 12:50	
SM 5310C	Total Organic Carbon	3.0	mg/L	1.0	07/07/18 03:50	
10437886004	**062618-MW12s**					
EPA 6010D	Aluminum, Dissolved	38.7J	ug/L	200	07/09/18 15:37	
EPA 6010D	Barium, Dissolved	135	ug/L	10.0	07/09/18 15:37	
EPA 6010D	Calcium, Dissolved	54600	ug/L	500	07/09/18 15:37	
EPA 6010D	Cobalt, Dissolved	0.53J	ug/L	10.0	07/09/18 15:37	
EPA 6010D	Iron, Dissolved	20.7J	ug/L	50.0	07/09/18 15:37	B
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	07/09/18 15:37	
EPA 6010D	Magnesium, Dissolved	15900	ug/L	500	07/09/18 15:37	
EPA 6010D	Manganese, Dissolved	4.7J	ug/L	5.0	07/09/18 15:37	
EPA 6010D	Potassium, Dissolved	5060	ug/L	2500	07/09/18 15:37	
EPA 6010D	Sodium, Dissolved	31700	ug/L	1000	07/09/18 15:37	
EPA 6010D	Vanadium, Dissolved	2.7J	ug/L	15.0	07/09/18 15:37	
EPA 6010D	Zinc, Dissolved	11.7J	ug/L	20.0	07/09/18 15:37	
SM 2320B	Alkalinity, Total as CaCO3	181	mg/L	5.0	07/10/18 09:41	
SM 2540C	Total Dissolved Solids	312	mg/L	20.0	07/03/18 14:32	
EPA 300.0	Chloride	25.5	mg/L	1.2	07/01/18 08:36	FS
EPA 300.0	Nitrate as N	4.6	mg/L	0.10	07/01/18 08:36	FS,H3
EPA 300.0	Sulfate	25.8	mg/L	1.2	07/01/18 08:36	FS
EPA 353.2	Nitrogen, NO2 plus NO3	3.6	mg/L	0.50	07/11/18 13:24	
EPA 410.4	Chemical Oxygen Demand	34.0J	mg/L	50.0	07/12/18 16:27	
SM 5310C	Total Organic Carbon	1.5	mg/L	1.0	07/07/18 04:07	B
10437886005	**062618-MW8s**					
EPA 6010D	Barium, Dissolved	31.4	ug/L	10.0	07/09/18 15:47	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	07/09/18 15:47	
EPA 6010D	Calcium, Dissolved	41200	ug/L	500	07/09/18 15:47	
EPA 6010D	Cobalt, Dissolved	0.76J	ug/L	10.0	07/09/18 15:47	
EPA 6010D	Iron, Dissolved	35.7J	ug/L	50.0	07/09/18 15:47	B
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	07/09/18 15:47	
EPA 6010D	Magnesium, Dissolved	10100	ug/L	500	07/09/18 15:47	
EPA 6010D	Manganese, Dissolved	32.5	ug/L	5.0	07/09/18 15:47	
EPA 6010D	Potassium, Dissolved	3080	ug/L	2500	07/09/18 15:47	
EPA 6010D	Sodium, Dissolved	17000	ug/L	1000	07/09/18 15:47	
EPA 6010D	Vanadium, Dissolved	1.0J	ug/L	15.0	07/09/18 15:47	
EPA 6010D	Zinc, Dissolved	35.3	ug/L	20.0	07/09/18 15:47	
SM 2320B	Alkalinity, Total as CaCO3	135	mg/L	5.0	07/10/18 09:45	
SM 2540C	Total Dissolved Solids	246	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	7.5	mg/L	1.2	07/01/18 08:51	FS

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437886005	**062618-MW8s**					
EPA 300.0	Nitrate as N	6.0	mg/L	0.10	07/01/18 08:51	FS,H3
EPA 300.0	Sulfate	19.5	mg/L	1.2	07/01/18 08:51	FS
EPA 353.2	Nitrogen, NO2 plus NO3	6.0	mg/L	0.50	07/11/18 13:25	
SM 5310C	Total Organic Carbon	3.2	mg/L	1.0	07/07/18 04:57	
10437886006	**062618-MW9s**					
EPA 6010D	Aluminum, Dissolved	57.1J	ug/L	200	07/09/18 15:48	
EPA 6010D	Barium, Dissolved	68.6	ug/L	10.0	07/09/18 15:48	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	07/09/18 15:48	
EPA 6010D	Cadmium, Dissolved	0.50J	ug/L	3.0	07/09/18 15:48	
EPA 6010D	Calcium, Dissolved	66000	ug/L	500	07/09/18 15:48	
EPA 6010D	Cobalt, Dissolved	1.6J	ug/L	10.0	07/09/18 15:48	
EPA 6010D	Iron, Dissolved	136	ug/L	50.0	07/09/18 15:48	
EPA 6010D	Magnesium, Dissolved	14900	ug/L	500	07/09/18 15:48	
EPA 6010D	Manganese, Dissolved	15.8	ug/L	5.0	07/09/18 15:48	
EPA 6010D	Nickel, Dissolved	2.4J	ug/L	20.0	07/09/18 15:48	
EPA 6010D	Potassium, Dissolved	1300J	ug/L	2500	07/09/18 15:48	
EPA 6010D	Sodium, Dissolved	15200	ug/L	1000	07/09/18 15:48	
EPA 6010D	Vanadium, Dissolved	1.4J	ug/L	15.0	07/09/18 15:48	
EPA 6010D	Zinc, Dissolved	5.4J	ug/L	20.0	07/09/18 15:48	
SM 2320B	Alkalinity, Total as CaCO3	80.0	mg/L	5.0	07/10/18 09:49	
SM 2540C	Total Dissolved Solids	378	mg/L	20.0	07/03/18 14:32	
EPA 300.0	Chloride	56.6	mg/L	1.2	07/01/18 09:06	FS
EPA 300.0	Nitrate as N	13.5	mg/L	0.50	07/01/18 16:22	FS,H3
EPA 300.0	Sulfate	59.8	mg/L	1.2	07/01/18 09:06	FS
EPA 353.2	Nitrogen, NO2 plus NO3	13.7	mg/L	1.0	07/11/18 13:26	
EPA 410.4	Chemical Oxygen Demand	18.9J	mg/L	50.0	07/17/18 14:04	
SM 5310C	Total Organic Carbon	2.2	mg/L	1.0	07/07/18 05:14	B
10437886007	**062618-MW7s**					
EPA 6010D	Aluminum, Dissolved	18.5J	ug/L	200	07/09/18 15:50	
EPA 6010D	Arsenic, Dissolved	7.5J	ug/L	20.0	07/09/18 15:50	
EPA 6010D	Barium, Dissolved	27.9	ug/L	10.0	07/09/18 15:50	
EPA 6010D	Calcium, Dissolved	15400	ug/L	500	07/09/18 15:50	
EPA 6010D	Chromium, Dissolved	0.56J	ug/L	10.0	07/09/18 15:50	
EPA 6010D	Copper, Dissolved	4.1J	ug/L	10.0	07/09/18 15:50	
EPA 6010D	Iron, Dissolved	29.0J	ug/L	50.0	07/09/18 15:50	B
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	07/09/18 15:50	
EPA 6010D	Magnesium, Dissolved	1860	ug/L	500	07/09/18 15:50	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	07/09/18 15:50	
EPA 6010D	Nickel, Dissolved	1.1J	ug/L	20.0	07/09/18 15:50	
EPA 6010D	Potassium, Dissolved	4150	ug/L	2500	07/09/18 15:50	
EPA 6010D	Sodium, Dissolved	4440	ug/L	1000	07/09/18 15:50	
EPA 6010D	Vanadium, Dissolved	2.4J	ug/L	15.0	07/09/18 15:50	
EPA 6010D	Zinc, Dissolved	28.2	ug/L	20.0	07/09/18 15:50	
SM 2320B	Alkalinity, Total as CaCO3	41.9	mg/L	5.0	07/10/18 09:52	
SM 2540C	Total Dissolved Solids	95.0	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	1.1J	mg/L	1.2	07/01/18 09:21	FS

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437886007	**062618-MW7s**					
EPA 300.0	Nitrate as N	4.5	mg/L	0.10	07/01/18 09:21	FS,H3
EPA 300.0	Sulfate	7.3	mg/L	1.2	07/01/18 09:21	FS
EPA 353.2	Nitrogen, NO2 plus NO3	4.4	mg/L	0.50	07/11/18 13:27	
EPA 410.4	Chemical Oxygen Demand	28.7J	mg/L	50.0	07/17/18 14:04	
SM 5310C	Total Organic Carbon	7.6	mg/L	1.0	07/07/18 05:31	
10437886008	**062618-MW1s**					
EPA 6010D	Aluminum, Dissolved	16.4J	ug/L	200	07/09/18 15:52	
EPA 6010D	Barium, Dissolved	209	ug/L	10.0	07/09/18 15:52	
EPA 6010D	Cadmium, Dissolved	0.27J	ug/L	3.0	07/09/18 15:52	
EPA 6010D	Calcium, Dissolved	103000	ug/L	500	07/09/18 15:52	
EPA 6010D	Cobalt, Dissolved	1.0J	ug/L	10.0	07/09/18 15:52	
EPA 6010D	Copper, Dissolved	2.4J	ug/L	10.0	07/09/18 15:52	
EPA 6010D	Iron, Dissolved	16.1J	ug/L	50.0	07/09/18 15:52	B
EPA 6010D	Magnesium, Dissolved	27300	ug/L	500	07/09/18 15:52	
EPA 6010D	Manganese, Dissolved	14.2	ug/L	5.0	07/09/18 15:52	
EPA 6010D	Potassium, Dissolved	520J	ug/L	2500	07/09/18 15:52	
EPA 6010D	Sodium, Dissolved	35100	ug/L	1000	07/09/18 15:52	
EPA 6010D	Vanadium, Dissolved	8.1J	ug/L	15.0	07/09/18 15:52	
EPA 6010D	Zinc, Dissolved	11.7J	ug/L	20.0	07/09/18 15:52	
SM 2320B	Alkalinity, Total as CaCO3	457	mg/L	5.0	07/10/18 09:56	
SM 2540C	Total Dissolved Solids	500	mg/L	10.0	07/03/18 14:32	
EPA 300.0	Chloride	6.6	mg/L	1.2	07/01/18 10:06	FS
EPA 300.0	Nitrate as N	0.094J	mg/L	0.10	07/01/18 10:06	FS,H3
EPA 300.0	Sulfate	25.7	mg/L	1.2	07/01/18 10:06	FS
EPA 353.2	Nitrogen, NO2 plus NO3	0.10	mg/L	0.10	07/11/18 12:56	
SM 5310C	Total Organic Carbon	3.8	mg/L	1.0	07/07/18 03:01	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437886

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548843

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548843 [MPRP/837 (Lab ID: 2983644)
  - Iron, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549380

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437632025,10437886001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2986111)
  - Alkalinity, Total as CaCO3
- MS (Lab ID: 2986113)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 114031

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867002,10437867003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 491418)
  - Sulfide, Total
- MS (Lab ID: 491420)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- 062618-MW10s (Lab ID: 10437886003)
- 062618-MW11s (Lab ID: 10437886002)
- 062618-MW12s (Lab ID: 10437886004)
- 062618-MW1s (Lab ID: 10437886008)
- 062618-MW6s (Lab ID: 10437886001)
- 062618-MW7s (Lab ID: 10437886007)
- 062618-MW8s (Lab ID: 10437886005)
- 062618-MW9s (Lab ID: 10437886006)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 547970

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2979327)
  - Nitrate as N
- MS (Lab ID: 2979329)
  - Nitrate as N
- MSD (Lab ID: 2979328)
  - Nitrate as N
- MSD (Lab ID: 2979330)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 549717

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437867004,10437878009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 549717

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2987488)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2987489)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 17, 2018

General Information:
8 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 146746

B: Analyte was detected in the associated method blank.

- BLANK for HBN 146746 [WETA/241 (Lab ID: 579939)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW6s **Lab ID: 10437886001** Collected: 06/26/18 12:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 07:24	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 07:24	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 07:24	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:25	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:25	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:25	7440-38-2	
Barium, Dissolved	**34.7**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:25	7440-39-3	
Beryllium, Dissolved	**0.13J**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:25	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:25	7440-43-9	
Calcium, Dissolved	**33500**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:25	7440-70-2	
Chromium, Dissolved	**0.64J**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:25	7440-47-3	
Cobalt, Dissolved	**0.78J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:25	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:25	7440-50-8	
Iron, Dissolved	**6.7J**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:25	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:25	7439-92-1	
Magnesium, Dissolved	**9550**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:25	7439-95-4	
Manganese, Dissolved	**0.61J**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:25	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:25	7440-02-0	
Potassium, Dissolved	**408J**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:25	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:25	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:25	7440-22-4	
Sodium, Dissolved	**10600**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:25	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:25	7440-28-0	
Vanadium, Dissolved	**4.1J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:25	7440-62-2	
Zinc, Dissolved	**7.7J**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:25	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 15:40	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**147**	mg/L	5.0	1.0	1		07/10/18 09:01		M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**192**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:44	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.4**	mg/L	1.2	0.28	1		07/01/18 07:50	16887-00-6	
Nitrate as N	**0.22**	mg/L	0.10	0.015	1		07/01/18 07:50	14797-55-8	H3
Sulfate	**1.6**	mg/L	1.2	0.19	1		07/01/18 07:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW6s **Lab ID: 10437886001** Collected: 06/26/18 12:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.29**	mg/L	0.10	0.011	1		07/11/18 12:46		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:26		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.5**	mg/L	1.0	0.20	1		07/07/18 03:17	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW11s **Lab ID: 10437886002** Collected: 06/26/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 07:31	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 07:31	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 07:31	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**58.1J**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:33	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:33	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:33	7440-38-2	
Barium, Dissolved	**46.4**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:33	7440-39-3	
Beryllium, Dissolved	**0.19J**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:33	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:33	7440-43-9	
Calcium, Dissolved	**44400**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:33	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:33	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:33	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:33	7440-50-8	
Iron, Dissolved	**60.8**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:33	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:33	7439-92-1	
Magnesium, Dissolved	**12800**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:33	7439-95-4	
Manganese, Dissolved	**24.6**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:33	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:33	7440-02-0	
Potassium, Dissolved	**600J**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:33	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:33	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:33	7440-22-4	
Sodium, Dissolved	**17900**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:33	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:33	7440-28-0	
Vanadium, Dissolved	**6.8J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:33	7440-62-2	
Zinc, Dissolved	**10.0J**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:33	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 15:42	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**213**	mg/L	5.0	1.0	1		07/10/18 09:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**232**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:45	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.28	1		07/01/18 08:05	16887-00-6	FS
Nitrate as N	**0.063J**	mg/L	0.10	0.015	1		07/01/18 08:05	14797-55-8	FS,H3
Sulfate	**3.1**	mg/L	1.2	0.19	1		07/01/18 08:05	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW11s **Lab ID: 10437886002** Collected: 06/26/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.061J**	mg/L	0.10	0.011	1		07/11/18 12:47		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:26		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		07/07/18 03:34	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW10s **Lab ID: 10437886003** Collected: 06/26/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 07:38	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 07:38	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 07:38	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:35	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:35	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:35	7440-38-2	
Barium, Dissolved	**29.9**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:35	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:35	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:35	7440-43-9	
Calcium, Dissolved	**71800**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:35	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:35	7440-47-3	
Cobalt, Dissolved	**0.79J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:35	7440-48-4	
Copper, Dissolved	**4.0J**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:35	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:35	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:35	7439-92-1	
Magnesium, Dissolved	**20500**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:35	7439-95-4	
Manganese, Dissolved	**2.2J**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:35	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:35	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:35	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:35	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:35	7440-22-4	
Sodium, Dissolved	**12900**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:35	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:35	7440-28-0	
Vanadium, Dissolved	**2.8J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:35	7440-62-2	
Zinc, Dissolved	**23.5**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:35	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 15:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**304**	mg/L	5.0	1.0	1		07/10/18 09:37		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**332**	mg/L	20.0	10.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:47	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**0.73J**	mg/L	1.2	0.28	1		07/01/18 08:21	16887-00-6	
Nitrate as N	**0.11**	mg/L	0.10	0.015	1		07/01/18 08:21	14797-55-8	H3
Sulfate	**1.9**	mg/L	1.2	0.19	1		07/01/18 08:21	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW10s **Lab ID: 10437886003** Collected: 06/26/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.10	0.011	1		07/11/18 12:50		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:27		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.0**	mg/L	1.0	0.20	1		07/07/18 03:50	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW12s **Lab ID: 10437886004** Collected: 06/26/18 13:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 07:46	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 07:46	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 07:46	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**38.7J**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:37	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:37	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:37	7440-38-2	
Barium, Dissolved	**135**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:37	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:37	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:37	7440-43-9	
Calcium, Dissolved	**54600**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:37	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:37	7440-47-3	
Cobalt, Dissolved	**0.53J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:37	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:37	7440-50-8	
Iron, Dissolved	**20.7J**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:37	7439-89-6	B
Lead, Dissolved	**2.4J**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:37	7439-92-1	
Magnesium, Dissolved	**15900**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:37	7439-95-4	
Manganese, Dissolved	**4.7J**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:37	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:37	7440-02-0	
Potassium, Dissolved	**5060**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:37	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:37	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:37	7440-22-4	
Sodium, Dissolved	**31700**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:37	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:37	7440-28-0	
Vanadium, Dissolved	**2.7J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:37	7440-62-2	
Zinc, Dissolved	**11.7J**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:37	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 15:56	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**181**	mg/L	5.0	1.0	1		07/10/18 09:41		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**312**	mg/L	20.0	10.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:49	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**25.5**	mg/L	1.2	0.28	1		07/01/18 08:36	16887-00-6	FS
Nitrate as N	**4.6**	mg/L	0.10	0.015	1		07/01/18 08:36	14797-55-8	FS,H3
Sulfate	**25.8**	mg/L	1.2	0.19	1		07/01/18 08:36	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW12s **Lab ID: 10437886004** Collected: 06/26/18 13:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.6**	mg/L	0.50	0.054	5		07/11/18 13:24		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**34.0J**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:27		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.5**	mg/L	1.0	0.20	1		07/07/18 04:07	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW8s **Lab ID: 10437886005** Collected: 06/26/18 14:10 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 07:53	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 07:53	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 07:53	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:47	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:47	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:47	7440-38-2	
Barium, Dissolved	**31.4**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:47	7440-39-3	
Beryllium, Dissolved	**0.16J**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:47	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:47	7440-43-9	
Calcium, Dissolved	**41200**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:47	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:47	7440-47-3	
Cobalt, Dissolved	**0.76J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:47	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:47	7440-50-8	
Iron, Dissolved	**35.7J**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:47	7439-89-6	B
Lead, Dissolved	**2.4J**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:47	7439-92-1	
Magnesium, Dissolved	**10100**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:47	7439-95-4	
Manganese, Dissolved	**32.5**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:47	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:47	7440-02-0	
Potassium, Dissolved	**3080**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:47	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:47	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:47	7440-22-4	
Sodium, Dissolved	**17000**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:47	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:47	7440-28-0	
Vanadium, Dissolved	**1.0J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:47	7440-62-2	
Zinc, Dissolved	**35.3**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:47	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 15:58	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**135**	mg/L	5.0	1.0	1		07/10/18 09:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**246**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:49	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.5**	mg/L	1.2	0.28	1		07/01/18 08:51	16887-00-6	FS
Nitrate as N	**6.0**	mg/L	0.10	0.015	1		07/01/18 08:51	14797-55-8	FS,H3
Sulfate	**19.5**	mg/L	1.2	0.19	1		07/01/18 08:51	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW8s **Lab ID: 10437886005** Collected: 06/26/18 14:10 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**6.0**	mg/L	0.50	0.054	5		07/11/18 13:25		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/12/18 11:40	07/12/18 16:27		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.2**	mg/L	1.0	0.20	1		07/07/18 04:57	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW9s **Lab ID: 10437886006** Collected: 06/26/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 08:14	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 08:14	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 08:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**57.1J**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:48	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:48	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:48	7440-38-2	
Barium, Dissolved	**68.6**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:48	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:48	7440-41-7	
Cadmium, Dissolved	**0.50J**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:48	7440-43-9	
Calcium, Dissolved	**66000**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:48	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:48	7440-47-3	
Cobalt, Dissolved	**1.6J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:48	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:48	7440-50-8	
Iron, Dissolved	**136**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:48	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:48	7439-92-1	
Magnesium, Dissolved	**14900**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:48	7439-95-4	
Manganese, Dissolved	**15.8**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:48	7439-96-5	
Nickel, Dissolved	**2.4J**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:48	7440-02-0	
Potassium, Dissolved	**1300J**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:48	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:48	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:48	7440-22-4	
Sodium, Dissolved	**15200**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:48	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:48	7440-28-0	
Vanadium, Dissolved	**1.4J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:48	7440-62-2	
Zinc, Dissolved	**5.4J**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:48	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 16:00	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**80.0**	mg/L	5.0	1.0	1		07/10/18 09:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**378**	mg/L	20.0	10.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:50	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**56.6**	mg/L	1.2	0.28	1		07/01/18 09:06	16887-00-6	FS
Nitrate as N	**13.5**	mg/L	0.50	0.073	5		07/01/18 16:22	14797-55-8	FS,H3
Sulfate	**59.8**	mg/L	1.2	0.19	1		07/01/18 09:06	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW9s **Lab ID: 10437886006** Collected: 06/26/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**13.7**	mg/L	1.0	0.11	10		07/11/18 13:26		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**18.9J**	mg/L	50.0	17.0	1	07/17/18 09:49	07/17/18 14:04		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.20	1		07/07/18 05:14	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW7s **Lab ID: 10437886007** Collected: 06/26/18 15:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 08:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 08:29	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 08:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**18.5J**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:50	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:50	7440-36-0	
Arsenic, Dissolved	**7.5J**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:50	7440-38-2	
Barium, Dissolved	**27.9**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:50	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:50	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:50	7440-43-9	
Calcium, Dissolved	**15400**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:50	7440-70-2	
Chromium, Dissolved	**0.56J**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:50	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:50	7440-48-4	
Copper, Dissolved	**4.1J**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:50	7440-50-8	
Iron, Dissolved	**29.0J**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:50	7439-89-6	B
Lead, Dissolved	**2.5J**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:50	7439-92-1	
Magnesium, Dissolved	**1860**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:50	7439-95-4	
Manganese, Dissolved	**1.1J**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:50	7439-96-5	
Nickel, Dissolved	**1.1J**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:50	7440-02-0	
Potassium, Dissolved	**4150**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:50	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:50	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:50	7440-22-4	
Sodium, Dissolved	**4440**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:50	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:50	7440-28-0	
Vanadium, Dissolved	**2.4J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:50	7440-62-2	
Zinc, Dissolved	**28.2**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:50	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 16:02	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**41.9**	mg/L	5.0	1.0	1		07/10/18 09:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**95.0**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:51	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.1J**	mg/L	1.2	0.28	1		07/01/18 09:21	16887-00-6	FS
Nitrate as N	**4.5**	mg/L	0.10	0.015	1		07/01/18 09:21	14797-55-8	FS,H3
Sulfate	**7.3**	mg/L	1.2	0.19	1		07/01/18 09:21	14808-79-8	FS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW7s **Lab ID: 10437886007** Collected: 06/26/18 15:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.4**	mg/L	0.50	0.054	5		07/11/18 13:27		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**28.7J**	mg/L	50.0	17.0	1	07/17/18 09:49	07/17/18 14:04		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**7.6**	mg/L	1.0	0.20	1		07/07/18 05:31	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW1s **Lab ID: 10437886008** Collected: 06/26/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/03/18 08:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/03/18 08:36	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/03/18 08:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**16.4J**	ug/L	200	15.5	1	07/06/18 13:49	07/09/18 15:52	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/06/18 13:49	07/09/18 15:52	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/06/18 13:49	07/09/18 15:52	7440-38-2	
Barium, Dissolved	**209**	ug/L	10.0	0.18	1	07/06/18 13:49	07/09/18 15:52	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/06/18 13:49	07/09/18 15:52	7440-41-7	
Cadmium, Dissolved	**0.27J**	ug/L	3.0	0.26	1	07/06/18 13:49	07/09/18 15:52	7440-43-9	
Calcium, Dissolved	**103000**	ug/L	500	13.9	1	07/06/18 13:49	07/09/18 15:52	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/06/18 13:49	07/09/18 15:52	7440-47-3	
Cobalt, Dissolved	**1.0J**	ug/L	10.0	0.50	1	07/06/18 13:49	07/09/18 15:52	7440-48-4	
Copper, Dissolved	**2.4J**	ug/L	10.0	1.2	1	07/06/18 13:49	07/09/18 15:52	7440-50-8	
Iron, Dissolved	**16.1J**	ug/L	50.0	4.3	1	07/06/18 13:49	07/09/18 15:52	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/06/18 13:49	07/09/18 15:52	7439-92-1	
Magnesium, Dissolved	**27300**	ug/L	500	9.8	1	07/06/18 13:49	07/09/18 15:52	7439-95-4	
Manganese, Dissolved	**14.2**	ug/L	5.0	0.22	1	07/06/18 13:49	07/09/18 15:52	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	07/06/18 13:49	07/09/18 15:52	7440-02-0	
Potassium, Dissolved	**520J**	ug/L	2500	310	1	07/06/18 13:49	07/09/18 15:52	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/06/18 13:49	07/09/18 15:52	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/06/18 13:49	07/09/18 15:52	7440-22-4	
Sodium, Dissolved	**35100**	ug/L	1000	21.5	1	07/06/18 13:49	07/09/18 15:52	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/06/18 13:49	07/09/18 15:52	7440-28-0	
Vanadium, Dissolved	**8.1J**	ug/L	15.0	0.29	1	07/06/18 13:49	07/09/18 15:52	7440-62-2	
Zinc, Dissolved	**11.7J**	ug/L	20.0	2.5	1	07/06/18 13:49	07/09/18 15:52	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/06/18 12:13	07/09/18 16:05	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**457**	mg/L	5.0	1.0	1		07/10/18 09:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**500**	mg/L	10.0	5.0	1		07/03/18 14:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/03/18 16:51	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.2	0.28	1		07/01/18 10:06	16887-00-6	FS
Nitrate as N	**0.094J**	mg/L	0.10	0.015	1		07/01/18 10:06	14797-55-8	FS,H3
Sulfate	**25.7**	mg/L	1.2	0.19	1		07/01/18 10:06	14808-79-8	FS

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Sample: 062618-MW1s **Lab ID: 10437886008** Collected: 06/26/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.10**	mg/L	0.10	0.011	1		07/11/18 12:56		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/17/18 09:49	07/17/18 14:05		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.8**	mg/L	1.0	0.20	1		07/07/18 03:01	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 548203 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2980224 | Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/03/18 06:41	
Ethene	ug/L	<2.9	10.0	2.9	07/03/18 06:41	
Methane	ug/L	<4.9	10.0	4.9	07/03/18 06:41	

LABORATORY CONTROL SAMPLE & LCSD: 2980225 2980226

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	106	109	93	96	85-115	2	20	
Ethene	ug/L	106	99.3	102	94	96	85-115	2	20	
Methane	ug/L	60.7	58.6	60.2	97	99	85-115	3	20	

SAMPLE DUPLICATE: 2980227

Parameter	Units	2079244001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	934	923	1	20	

SAMPLE DUPLICATE: 2980228

Parameter	Units	10437886006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 548842 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2983640 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/09/18 15:31	

LABORATORY CONTROL SAMPLE: 2983641

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983642 2983643

Parameter	Units	10437886002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.1	5.1	101	101	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 548843 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2983644 | Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/09/18 15:22	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/09/18 15:22	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/09/18 15:22	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/09/18 15:22	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/09/18 15:22	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/09/18 15:22	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/09/18 15:22	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/09/18 15:22	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/09/18 15:22	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/09/18 15:22	
Iron, Dissolved	ug/L	8.8J	50.0	4.3	07/09/18 15:22	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/09/18 15:22	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/09/18 15:22	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/09/18 15:22	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/09/18 15:22	
Potassium, Dissolved	ug/L	<310	2500	310	07/09/18 15:22	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/09/18 15:22	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/09/18 15:22	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	07/09/18 15:22	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/09/18 15:22	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	07/09/18 15:22	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/09/18 15:22	

LABORATORY CONTROL SAMPLE: 2983645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19900	100	80-120	
Antimony, Dissolved	ug/L	1000	944	94	80-120	
Arsenic, Dissolved	ug/L	1000	956	96	80-120	
Barium, Dissolved	ug/L	1000	956	96	80-120	
Beryllium, Dissolved	ug/L	1000	973	97	80-120	
Cadmium, Dissolved	ug/L	1000	959	96	80-120	
Calcium, Dissolved	ug/L	20000	18700	93	80-120	
Chromium, Dissolved	ug/L	1000	951	95	80-120	
Cobalt, Dissolved	ug/L	1000	953	95	80-120	
Copper, Dissolved	ug/L	1000	912	91	80-120	
Iron, Dissolved	ug/L	20000	19100	95	80-120	
Lead, Dissolved	ug/L	1000	966	97	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

LABORATORY CONTROL SAMPLE: 2983645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	977	98	80-120	
Nickel, Dissolved	ug/L	1000	957	96	80-120	
Potassium, Dissolved	ug/L	20000	18700	93	80-120	
Selenium, Dissolved	ug/L	1000	1000	100	80-120	
Silver, Dissolved	ug/L	500	476	95	80-120	
Sodium, Dissolved	ug/L	20000	18500	93	80-120	
Thallium, Dissolved	ug/L	1000	948	95	80-120	
Vanadium, Dissolved	ug/L	1000	941	94	80-120	
Zinc, Dissolved	ug/L	1000	974	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983646 2983647

Parameter	Units	10437886001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	20400	20700	102	103	75-125	1	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	981	982	98	98	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	983	993	98	99	75-125	1	20	
Barium, Dissolved	ug/L	34.7	1000	1000	1020	1020	99	98	75-125	0	20	
Beryllium, Dissolved	ug/L	0.13J	1000	1000	1010	1020	101	102	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	984	993	98	99	75-125	1	20	
Calcium, Dissolved	ug/L	33500	20000	20000	52300	52500	94	95	75-125	0	20	
Chromium, Dissolved	ug/L	0.64J	1000	1000	975	985	97	98	75-125	1	20	
Cobalt, Dissolved	ug/L	0.78J	1000	1000	965	973	96	97	75-125	1	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	940	954	94	95	75-125	2	20	
Iron, Dissolved	ug/L	6.7J	20000	20000	19500	19800	97	99	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	986	992	98	99	75-125	1	20	
Magnesium, Dissolved	ug/L	9550	20000	20000	29100	29300	98	99	75-125	1	20	
Manganese, Dissolved	ug/L	0.61J	1000	1000	1000	1000	100	100	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	967	976	97	98	75-125	1	20	
Potassium, Dissolved	ug/L	408J	20000	20000	20400	20500	100	100	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1020	1030	102	103	75-125	1	20	
Silver, Dissolved	ug/L	<0.38	500	500	492	498	98	100	75-125	1	20	
Sodium, Dissolved	ug/L	10600	20000	20000	28900	29200	92	93	75-125	1	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	969	980	97	98	75-125	1	20	
Vanadium, Dissolved	ug/L	4.1J	1000	1000	973	982	97	98	75-125	1	20	
Zinc, Dissolved	ug/L	7.7J	1000	1000	995	1000	99	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 549380 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2986108 — Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/10/18 08:31	

LABORATORY CONTROL SAMPLE & LCSD: 2986109 2986110

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.4	41.9	103	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986111 2986112

Parameter	Units	10437632025 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	281	40	40	312	318	79	93	80-120	2	30	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986113 2986114

Parameter	Units	10437886001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	147	40	40	197	194	126	118	80-120	2	30	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 548339 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2980909 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/03/18 14:32	

LABORATORY CONTROL SAMPLE & LCSD: 2980910 2980911

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	976	982	98	98	80-120	1	10	

SAMPLE DUPLICATE: 2980912

Parameter	Units	10437867003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	266	0	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 114031 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 491415 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/03/18 16:33	

LABORATORY CONTROL SAMPLE: 491416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 491418

Parameter	Units	10437867002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.12	58	75-125	M1

MATRIX SPIKE SAMPLE: 491420

Parameter	Units	10437867003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.11	54	75-125	M1

SAMPLE DUPLICATE: 491417

Parameter	Units	10437867002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 491419

Parameter	Units	10437867003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 547970 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2979325 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	07/01/18 01:58	FS
Nitrate as N	mg/L	<0.015	0.10	0.015	07/01/18 01:58	FS
Sulfate	mg/L	<0.19	1.2	0.19	07/01/18 01:58	FS

LABORATORY CONTROL SAMPLE: 2979326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	FS
Nitrate as N	mg/L	1	0.94	94	90-110	FS
Sulfate	mg/L	12.5	12.5	100	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979327 2979328

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.9	12.5	12.5	18.3	18.4	92	92	90-110	0	20	
Nitrate as N	mg/L	1.8	1	1	2.7	2.7	82	84	90-110	1	20	M1
Sulfate	mg/L	7.9	12.5	12.5	20.0	20.1	97	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979329 2979330

Parameter	Units	10437878008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	12.5	12.5	14.9	14.8	95	95	90-110	1	20	FS
Nitrate as N	mg/L	1.9	1	1	2.8	2.8	84	83	90-110	0	20	FS,M1
Sulfate	mg/L	6.3	12.5	12.5	18.8	18.7	100	99	90-110	1	20	FS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 549717 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 2987486 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/11/18 12:59	

LABORATORY CONTROL SAMPLE: 2987487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987488 2987489

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	2.8	2.9	87	101	90-110	5	20	E,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987490 2987491

Parameter	Units	10437878009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	9.4	9.2	103	99	90-110	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 549997 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005

METHOD BLANK: 2988765 | Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/12/18 16:20	

LABORATORY CONTROL SAMPLE: 2988766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	305	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988767 2988768

Parameter	Units	10437867004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	274	267	107	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988769 2988770

Parameter	Units	10437878005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	266	273	106	109	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 550807   Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4   Analysis Description: 410.4 COD
Associated Lab Samples: 10437886006, 10437886007, 10437886008

METHOD BLANK: 2993453   Matrix: Water
Associated Lab Samples: 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/17/18 14:03	

LABORATORY CONTROL SAMPLE: 2993454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	311	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2993455   2993456

Parameter	Units	10437886006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	18.9J	250	250	271	288	101	108	90-110	6	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2993457   2993458

Parameter	Units	10437886007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	28.7J	250	250	301	292	109	105	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

QC Batch: 146746 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

METHOD BLANK: 579939 Matrix: Water
Associated Lab Samples: 10437886001, 10437886002, 10437886003, 10437886004, 10437886005, 10437886006, 10437886007, 10437886008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.23J	1.0	0.20	07/06/18 22:17	

LABORATORY CONTROL SAMPLE: 579940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 579941 579942

Parameter	Units	10437671001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.22J	25	25	25.4	25.2	101	100	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 579943 579944

Parameter	Units	10437456001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	4.6	25	25	29.2	29.5	99	100	80-120	1	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437886001	**062618-MW6s**	RSK 175	548203		
10437886002	**062618-MW11s**	RSK 175	548203		
10437886003	**062618-MW10s**	RSK 175	548203		
10437886004	**062618-MW12s**	RSK 175	548203		
10437886005	**062618-MW8s**	RSK 175	548203		
10437886006	**062618-MW9s**	RSK 175	548203		
10437886007	**062618-MW7s**	RSK 175	548203		
10437886008	**062618-MW1s**	RSK 175	548203		
10437886001	**062618-MW6s**	EPA 3010	548843	EPA 6010D	549149
10437886002	**062618-MW11s**	EPA 3010	548843	EPA 6010D	549149
10437886003	**062618-MW10s**	EPA 3010	548843	EPA 6010D	549149
10437886004	**062618-MW12s**	EPA 3010	548843	EPA 6010D	549149
10437886005	**062618-MW8s**	EPA 3010	548843	EPA 6010D	549149
10437886006	**062618-MW9s**	EPA 3010	548843	EPA 6010D	549149
10437886007	**062618-MW7s**	EPA 3010	548843	EPA 6010D	549149
10437886008	**062618-MW1s**	EPA 3010	548843	EPA 6010D	549149
10437886001	**062618-MW6s**	EPA 7470A	548842	EPA 7470A	549062
10437886002	**062618-MW11s**	EPA 7470A	548842	EPA 7470A	549062
10437886003	**062618-MW10s**	EPA 7470A	548842	EPA 7470A	549062
10437886004	**062618-MW12s**	EPA 7470A	548842	EPA 7470A	549062
10437886005	**062618-MW8s**	EPA 7470A	548842	EPA 7470A	549062
10437886006	**062618-MW9s**	EPA 7470A	548842	EPA 7470A	549062
10437886007	**062618-MW7s**	EPA 7470A	548842	EPA 7470A	549062
10437886008	**062618-MW1s**	EPA 7470A	548842	EPA 7470A	549062
10437886001	**062618-MW6s**	SM 2320B	549380		
10437886002	**062618-MW11s**	SM 2320B	549380		
10437886003	**062618-MW10s**	SM 2320B	549380		
10437886004	**062618-MW12s**	SM 2320B	549380		
10437886005	**062618-MW8s**	SM 2320B	549380		
10437886006	**062618-MW9s**	SM 2320B	549380		
10437886007	**062618-MW7s**	SM 2320B	549380		
10437886008	**062618-MW1s**	SM 2320B	549380		
10437886001	**062618-MW6s**	SM 2540C	548339		
10437886002	**062618-MW11s**	SM 2540C	548339		
10437886003	**062618-MW10s**	SM 2540C	548339		
10437886004	**062618-MW12s**	SM 2540C	548339		
10437886005	**062618-MW8s**	SM 2540C	548339		
10437886006	**062618-MW9s**	SM 2540C	548339		
10437886007	**062618-MW7s**	SM 2540C	548339		
10437886008	**062618-MW1s**	SM 2540C	548339		
10437886001	**062618-MW6s**	SM 4500-S-2 D	114031		
10437886002	**062618-MW11s**	SM 4500-S-2 D	114031		
10437886003	**062618-MW10s**	SM 4500-S-2 D	114031		
10437886004	**062618-MW12s**	SM 4500-S-2 D	114031		
10437886005	**062618-MW8s**	SM 4500-S-2 D	114031		
10437886006	**062618-MW9s**	SM 4500-S-2 D	114031		

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437886

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437886007	**062618-MW7s**	SM 4500-S-2 D	114031		
10437886008	**062618-MW1s**	SM 4500-S-2 D	114031		
10437886001	**062618-MW6s**	EPA 300.0	547970		
10437886002	**062618-MW11s**	EPA 300.0	547970		
10437886003	**062618-MW10s**	EPA 300.0	547970		
10437886004	**062618-MW12s**	EPA 300.0	547970		
10437886005	**062618-MW8s**	EPA 300.0	547970		
10437886006	**062618-MW9s**	EPA 300.0	547970		
10437886007	**062618-MW7s**	EPA 300.0	547970		
10437886008	**062618-MW1s**	EPA 300.0	547970		
10437886001	**062618-MW6s**	EPA 353.2	549717		
10437886002	**062618-MW11s**	EPA 353.2	549717		
10437886003	**062618-MW10s**	EPA 353.2	549717		
10437886004	**062618-MW12s**	EPA 353.2	549717		
10437886005	**062618-MW8s**	EPA 353.2	549717		
10437886006	**062618-MW9s**	EPA 353.2	549717		
10437886007	**062618-MW7s**	EPA 353.2	549717		
10437886008	**062618-MW1s**	EPA 353.2	549717		
10437886001	**062618-MW6s**	EPA 410.4	549997	EPA 410.4	550150
10437886002	**062618-MW11s**	EPA 410.4	549997	EPA 410.4	550150
10437886003	**062618-MW10s**	EPA 410.4	549997	EPA 410.4	550150
10437886004	**062618-MW12s**	EPA 410.4	549997	EPA 410.4	550150
10437886005	**062618-MW8s**	EPA 410.4	549997	EPA 410.4	550150
10437886006	**062618-MW9s**	EPA 410.4	550807	EPA 410.4	550948
10437886007	**062618-MW7s**	EPA 410.4	550807	EPA 410.4	550948
10437886008	**062618-MW1s**	EPA 410.4	550807	EPA 410.4	550948
10437886001	**062618-MW6s**	SM 5310C	146746		
10437886002	**062618-MW11s**	SM 5310C	146746		
10437886003	**062618-MW10s**	SM 5310C	146746		
10437886004	**062618-MW12s**	SM 5310C	146746		
10437886005	**062618-MW8s**	SM 5310C	146746		
10437886006	**062618-MW9s**	SM 5310C	146746		
10437886007	**062618-MW7s**	SM 5310C	146746		
10437886008	**062618-MW1s**	SM 5310C	146746		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

WO# : 10437886

10437886

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* – Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane,	COD 410.4	Nitrate+Nitrite 3		MS/MSD Request		
1	062618-MW6S	WT	G	6/26	1215	—	—	—	3	X	X	X		X				X	X	X	X	X	X	X	X	X				24 hold!! wi
2	062618-MW11S	↓	↓	↓	1245	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w2
3	062618-MW10S	↓	↓	↓	1320	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w3
4	062618-MW12S	↓	↓	↓	1345	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w4
5	062618-MW8S	↓	↓	↓	1410	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w5
6	062618-MW9S	↓	↓	↓	1430	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w6
7	062618-MW7S	↓	↓	↓	1545	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w7
8	062618-MW1S	↓	↓	↓	1600	↓	↓	↓	↓	X	X	X		X				X	X	X	X	X	X	X	X	X				w8
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	J. Li / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	4.8	Y	Y	Y
*Field filtered by client							3.7			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 6/26/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #: **WO# : 10437886**

PM: JMG **Due Date:** 07/10/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other: ____

Tracking Number: 7448 1037 2369

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: ____ **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.7, 3.6 **Cooler Temp Corrected (°C):** 4.8, 3.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ERL 6/30/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # L8:1/1 L-8:1/1 L-8:1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☑ N/A	Initial when completed: ____ Lot # of added preservative: ____
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): ____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: ____

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane, RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1541	Temp: 4.8, 3.7	Corrected Temp:
Time: 1601	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10437886 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 6/30/2018 Results Requested By: 7/17/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	062618-MW6s	PS	6/26/2018 12:15	10437886001	Water	2	X	
2	062618-MW11s	PS	6/26/2018 12:45	10437886002	Water	2	X	
3	062618-MW10s	PS	6/26/2018 13:20	10437886003	Water	2	X	
4	062618-MW12s	PS	6/26/2018 13:45	10437886004	Water	2	X	
5	062618-MW8s	PS	6/26/2018 14:10	10437886005	Water	2	X	
6	062618-MW9s	PS	6/26/2018 14:30	10437886006	Water	2	X	
7	062618-MW7s	PS	6/26/2018 15:45	10437886007	Water	2	X	
8	062618-MW1s	PS	6/26/2018 16:00	10437886008	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature]	7/2/18 1240	B. Mathes	7/3/18 1040	
2					
3					

Cooler Temperature on Receipt 1.8 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Sample Condition Upon Receipt

Client Name: Pace MPLS

Project #:

WO#: 12111472
PM: HRZ Due Date: 07/17/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5 Cooler Temp Corrected °C: 1.8 Biological Tissue Frozen? ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: BM 7/3/18

	Yes	No	N/A	Comments
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☐	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑	☐	☐	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jean Date: 7/5/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Pace Analytical®
www.pacelabs.com

Workorder: 10437886 **Workorder Name:** 1497 Freeman WA-Grain Handling **Owner Received Date:** 6/30/2018 **Results Requested By:** 7/17/2018

Report To

Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To

Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

WO#: 2079582

2079582

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	062618-MW6s	PS	6/26/2018 12:15	10437886001	Water	1	X	
2	062618-MW11s	PS	6/26/2018 12:45	10437886002	Water	1	X	
3	062618-MW10s	PS	6/26/2018 13:20	10437886003	Water	1	X	
4	062618-MW12s	PS	6/26/2018 13:45	10437886004	Water	1	X	
5	062618-MW8s	PS	6/26/2018 14:10	10437886005	Water	1	X	
6	062618-MW9s	PS	6/26/2018 14:30	10437886006	Water	1	X	
7	062618-MW7s	PS	6/26/2018 15:45	10437886007	Water	1	X	
8	062618-MW1s	PS	6/26/2018 16:00	10437886008	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/2/18 1233	Fed Ex	
2	Fed Ex	7/3/18 0925	[signature] Pace	7/3/18 0925
3				

Comments

Cooler Temperature on Receipt 1.6 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

Sample Condition Upon F **WO#:2079582**

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proj PM: CMM Due Date: 07/17/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑ Yes ☐ No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 7/3/18 CMM

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑ Yes ☐ No ☐ N/A	1
Chain of Custody Present:	☑ Yes ☐ No ☐ N/A	2
Chain of Custody Complete:	☑ Yes ☐ No ☐ N/A	3
Chain of Custody Relinquished:	☑ Yes ☐ No ☐ N/A	4
Sampler Name & Signature on COC:	☐ Yes ☑ No ☐ N/A	5
Samples Arrived within Hold Time:	☑ Yes ☐ No ☐ N/A	6
Sufficient Volume:	☑ Yes ☐ No ☐ N/A	7
Correct Containers Used:	☑ Yes ☐ No ☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes ☐ No ☑ N/A	9
Sample Labels match COC:	☑ Yes ☐ No ☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑ Yes ☐ No ☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑ Yes ☐ No ☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑ Yes ☐ No ☐ N/A	13 If No, was preserative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☑ N/A	14
Trip Blank Present:	☐ Yes ☑ No	15

Client Notification/ Resolution:

Person Contacted: ________________ Date/Time: ________

Comments/ Resolution: ________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 11, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437889

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10437889001	**062618-MW6s**	Water	06/26/18 12:15	06/30/18 09:30
10437889002	**062618-MW11s**	Water	06/26/18 12:45	06/30/18 09:30
10437889003	**062618-MW10s**	Water	06/26/18 13:20	06/30/18 09:30
10437889004	**062618-MW12s**	Water	06/26/18 13:45	06/30/18 09:30
10437889005	**062618-MW8s**	Water	06/26/18 14:10	06/30/18 09:30
10437889006	**062618-MW9s**	Water	06/26/18 14:30	06/30/18 09:30
10437889007	**062618-MW7s**	Water	06/26/18 15:45	06/30/18 09:30
10437889008	**062618-MW1s**	Water	06/26/18 16:00	06/30/18 09:30
10437889009	**Trip Blank**	Water	06/26/18 00:00	06/30/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10437889001	**062618-MW6s**	EPA 8260B	AEZ	83	PASI-M
10437889002	**062618-MW11s**	EPA 8260B	AEZ	83	PASI-M
10437889003	**062618-MW10s**	EPA 8260B	AEZ	83	PASI-M
10437889004	**062618-MW12s**	EPA 8260B	AEZ	83	PASI-M
10437889005	**062618-MW8s**	EPA 8260B	AEZ	83	PASI-M
10437889006	**062618-MW9s**	EPA 8260B	AEZ	83	PASI-M
10437889007	**062618-MW7s**	EPA 8260B	AEZ	83	PASI-M
10437889008	**062618-MW1s**	EPA 8260B	AEZ	83	PASI-M
10437889009	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10437889003	**062618-MW10s**					
EPA 8260B	Carbon tetrachloride	0.46J	ug/L	0.50	07/07/18 02:46	
10437889005	**062618-MW8s**					
EPA 8260B	Carbon disulfide	0.27J	ug/L	1.0	07/07/18 03:09	
EPA 8260B	Carbon tetrachloride	121	ug/L	0.50	07/07/18 03:09	
EPA 8260B	Chloroform	43.1	ug/L	1.0	07/07/18 03:09	
10437889006	**062618-MW9s**					
EPA 8260B	Carbon disulfide	0.13J	ug/L	1.0	07/07/18 03:33	
EPA 8260B	Carbon tetrachloride	309	ug/L	1.0	07/09/18 19:11	
EPA 8260B	Chloroform	57.0	ug/L	1.0	07/07/18 03:33	
10437889007	**062618-MW7s**					
EPA 8260B	Carbon tetrachloride	0.38J	ug/L	0.50	07/09/18 14:29	
10437889009	**Trip Blank**					
EPA 8260B	Methylene Chloride	1.1J	ug/L	4.0	07/07/18 00:25	B

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 11, 2018

General Information:
9 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 548931

B: Analyte was detected in the associated method blank.
- BLANK for HBN 548931 [MSV/4456 (Lab ID: 2983988)
  - Methylene Chloride

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 548931

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10437860001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MSD (Lab ID: 2983991)
  - Carbon tetrachloride

QC Batch: 549215

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 11, 2018

Additional Comments:

Analyte Comments:

QC Batch: 548930

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062618-MW12s (Lab ID: 10437889004)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2983983)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2983984)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2985631)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2985632)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062618-MW10s (Lab ID: 10437889003)
  - Dichlorofluoromethane
- 062618-MW11s (Lab ID: 10437889002)
  - Dichlorofluoromethane
- 062618-MW1s (Lab ID: 10437889008)
  - Dichlorofluoromethane
- 062618-MW6s (Lab ID: 10437889001)
  - Dichlorofluoromethane
- 062618-MW8s (Lab ID: 10437889005)
  - Dichlorofluoromethane
- 062618-MW9s (Lab ID: 10437889006)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2983988)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2983989)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 11, 2018

Analyte Comments:

QC Batch: 548931

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 2983990)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2983991)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10437889009)
  - Dichlorofluoromethane

QC Batch: 549215

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2985595)
  - Carbon tetrachloride

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- 062618-MW7s (Lab ID: 10437889007)
  - Dichlorofluoromethane
- BLANK (Lab ID: 2985590)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- DUP (Lab ID: 2985596)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2985591)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCSD (Lab ID: 2985592)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2985595)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW6s **Lab ID: 10437889001** Collected: 06/26/18 12:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:35	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:35	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 01:35	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:35	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:35	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:35	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:35	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 01:35	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:35	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 01:35	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:35	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:35	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:35	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:35	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:35	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:35	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:35	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 01:35	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:35	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 01:35	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 01:35	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 01:35	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 01:35	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:35	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 01:35	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 01:35	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 01:35	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 01:35	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:35	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 01:35	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:35	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:35	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:35	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:35	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 01:35	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 01:35	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 01:35	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 01:35	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:35	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 01:35	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 01:35	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:35	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:35	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW6s **Lab ID: 10437889001** Collected: 06/26/18 12:15 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 01:35	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 01:35	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 01:35	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 01:35	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:35	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:35	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:35	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:35	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 01:35	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 01:35	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 01:35	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:35	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 01:35	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 01:35	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 01:35	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 01:35	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 01:35	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 01:35	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 01:35	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:35	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:35	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:35	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:35	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:35	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:35	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:35	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:35	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 01:35	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:35	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:35	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:35	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:35	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 01:35	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 01:35	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		07/07/18 01:35	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 01:35	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW11s **Lab ID: 10437889002** Collected: 06/26/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:59	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:59	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:59	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:59	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 01:59	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:59	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:59	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:59	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:59	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 01:59	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:59	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:59	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 01:59	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:59	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:59	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:59	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:59	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:59	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:59	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:59	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 01:59	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:59	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 01:59	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 01:59	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 01:59	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 01:59	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:59	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 01:59	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 01:59	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 01:59	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 01:59	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:59	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 01:59	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:59	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 01:59	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 01:59	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 01:59	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 01:59	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 01:59	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 01:59	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 01:59	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:59	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 01:59	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 01:59	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 01:59	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:59	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW11s **Lab ID: 10437889002** Collected: 06/26/18 12:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 01:59	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 01:59	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 01:59	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 01:59	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:59	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 01:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:59	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:59	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:59	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 01:59	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 01:59	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 01:59	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 01:59	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 01:59	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 01:59	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 01:59	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 01:59	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 01:59	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 01:59	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 01:59	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:59	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 01:59	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 01:59	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 01:59	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 01:59	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 01:59	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:59	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:59	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 01:59	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 01:59	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 01:59	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 01:59	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 01:59	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 01:59	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 01:59	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/07/18 01:59	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 01:59	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW10s **Lab ID: 10437889003** Collected: 06/26/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:46	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:46	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:46	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:46	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 02:46	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:46	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:46	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:46	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 02:46	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 02:46	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:46	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:46	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 02:46	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 02:46	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:46	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 02:46	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 02:46	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 02:46	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:46	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:46	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 02:46	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:46	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 02:46	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 02:46	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 02:46	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 02:46	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:46	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 02:46	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 02:46	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 02:46	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 02:46	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 02:46	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 02:46	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 02:46	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 02:46	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 02:46	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 02:46	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 02:46	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 02:46	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 02:46	75-15-0	
Carbon tetrachloride	**0.46J**	ug/L	0.50	0.19	1		07/07/18 02:46	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:46	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 02:46	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 02:46	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 02:46	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:46	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437889

Sample: 062618-MW10s **Lab ID: 10437889003** Collected: 06/26/18 13:20 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 02:46	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 02:46	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 02:46	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 02:46	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:46	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 02:46	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 02:46	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:46	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:46	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 02:46	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 02:46	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 02:46	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 02:46	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 02:46	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 02:46	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 02:46	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 02:46	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 02:46	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 02:46	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 02:46	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:46	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 02:46	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 02:46	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 02:46	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 02:46	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 02:46	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:46	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:46	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 02:46	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 02:46	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 02:46	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 02:46	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 02:46	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 02:46	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1		07/07/18 02:46	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/07/18 02:46	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 02:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW12s **Lab ID: 10437889004** Collected: 06/26/18 13:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/06/18 14:38	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/06/18 14:38	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/06/18 14:38	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/06/18 14:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/06/18 14:38	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/06/18 14:38	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 14:38	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 14:38	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/06/18 14:38	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/06/18 14:38	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 14:38	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 14:38	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/06/18 14:38	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/06/18 14:38	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/06/18 14:38	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/06/18 14:38	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/06/18 14:38	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/06/18 14:38	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/06/18 14:38	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 14:38	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/06/18 14:38	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 14:38	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/06/18 14:38	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/06/18 14:38	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/06/18 14:38	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/06/18 14:38	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 14:38	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/06/18 14:38	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/06/18 14:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/06/18 14:38	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/06/18 14:38	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/06/18 14:38	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/06/18 14:38	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/06/18 14:38	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/06/18 14:38	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/06/18 14:38	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/06/18 14:38	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/06/18 14:38	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/06/18 14:38	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/06/18 14:38	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/06/18 14:38	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 14:38	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/06/18 14:38	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/06/18 14:38	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/06/18 14:38	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/06/18 14:38	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW12s **Lab ID: 10437889004** Collected: 06/26/18 13:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/06/18 14:38	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/06/18 14:38	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/06/18 14:38	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/06/18 14:38	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/06/18 14:38	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/06/18 14:38	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/06/18 14:38	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/06/18 14:38	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/06/18 14:38	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/06/18 14:38	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/06/18 14:38	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/06/18 14:38	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/06/18 14:38	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/06/18 14:38	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/06/18 14:38	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/06/18 14:38	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/06/18 14:38	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/06/18 14:38	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/06/18 14:38	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/06/18 14:38	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 14:38	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/06/18 14:38	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/06/18 14:38	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/06/18 14:38	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/06/18 14:38	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/06/18 14:38	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 14:38	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 14:38	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/06/18 14:38	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/06/18 14:38	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/06/18 14:38	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/06/18 14:38	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/06/18 14:38	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/06/18 14:38	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/06/18 14:38	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/06/18 14:38	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/06/18 14:38	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW8s **Lab ID: 10437889005** Collected: 06/26/18 14:10 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:09	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:09	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 03:09	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:09	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:09	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:09	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 03:09	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 03:09	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:09	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 03:09	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 03:09	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:09	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 03:09	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 03:09	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 03:09	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:09	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:09	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 03:09	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:09	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 03:09	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 03:09	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 03:09	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 03:09	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:09	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 03:09	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 03:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 03:09	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 03:09	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 03:09	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 03:09	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 03:09	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 03:09	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 03:09	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 03:09	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 03:09	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 03:09	74-83-9	
Carbon disulfide	**0.27J**	ug/L	1.0	0.078	1		07/07/18 03:09	75-15-0	
Carbon tetrachloride	**121**	ug/L	0.50	0.19	1		07/07/18 03:09	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:09	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 03:09	75-00-3	
Chloroform	**43.1**	ug/L	1.0	0.45	1		07/07/18 03:09	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 03:09	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:09	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437889

Sample: 062618-MW8s **Lab ID: 10437889005** Collected: 06/26/18 14:10 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 03:09	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 03:09	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 03:09	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 03:09	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:09	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 03:09	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:09	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:09	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 03:09	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 03:09	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 03:09	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:09	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 03:09	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 03:09	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 03:09	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 03:09	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 03:09	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 03:09	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 03:09	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:09	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:09	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 03:09	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 03:09	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 03:09	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:09	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:09	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:09	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 03:09	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 03:09	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:09	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:09	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:09	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 03:09	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 03:09	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		07/07/18 03:09	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		07/07/18 03:09	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW9s **Lab ID: 10437889006** Collected: 06/26/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:33	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:33	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:33	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:33	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 03:33	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:33	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:33	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:33	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 03:33	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 03:33	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:33	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:33	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 03:33	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 03:33	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:33	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 03:33	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 03:33	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 03:33	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:33	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:33	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 03:33	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:33	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 03:33	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 03:33	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 03:33	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 03:33	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:33	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 03:33	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 03:33	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 03:33	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 03:33	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 03:33	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 03:33	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 03:33	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 03:33	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 03:33	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 03:33	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 03:33	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 03:33	74-83-9	
Carbon disulfide	**0.13J**	ug/L	1.0	0.078	1		07/07/18 03:33	75-15-0	
Carbon tetrachloride	**309**	ug/L	1.0	0.38	2		07/09/18 19:11	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:33	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 03:33	75-00-3	
Chloroform	**57.0**	ug/L	1.0	0.45	1		07/07/18 03:33	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 03:33	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:33	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW9s **Lab ID: 10437889006** Collected: 06/26/18 14:30 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 03:33	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 03:33	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 03:33	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 03:33	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:33	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 03:33	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 03:33	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:33	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:33	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 03:33	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 03:33	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 03:33	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 03:33	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 03:33	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 03:33	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 03:33	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 03:33	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 03:33	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 03:33	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 03:33	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:33	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 03:33	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 03:33	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 03:33	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 03:33	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 03:33	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:33	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:33	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 03:33	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 03:33	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 03:33	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 03:33	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 03:33	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 03:33	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 03:33	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/07/18 03:33	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		07/07/18 03:33	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW7s **Lab ID: 10437889007** Collected: 06/26/18 15:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/09/18 14:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/09/18 14:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/09/18 14:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:29	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/09/18 14:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/09/18 14:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/09/18 14:29	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/09/18 14:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/09/18 14:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/09/18 14:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/09/18 14:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/09/18 14:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/09/18 14:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/09/18 14:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/09/18 14:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/09/18 14:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/09/18 14:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/09/18 14:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/09/18 14:29	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/09/18 14:29	75-15-0	
Carbon tetrachloride	**0.38J**	ug/L	0.50	0.19	1		07/09/18 14:29	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/09/18 14:29	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/09/18 14:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/09/18 14:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:29	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW7s **Lab ID: 10437889007** Collected: 06/26/18 15:45 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/09/18 14:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/09/18 14:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/09/18 14:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/09/18 14:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/09/18 14:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/09/18 14:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/09/18 14:29	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/09/18 14:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/09/18 14:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/09/18 14:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/09/18 14:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/09/18 14:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/09/18 14:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/09/18 14:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/09/18 14:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/09/18 14:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/09/18 14:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/09/18 14:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/09/18 14:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/09/18 14:29	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/09/18 14:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/09/18 14:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/09/18 14:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/09/18 14:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/09/18 14:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/09/18 14:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/09/18 14:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/09/18 14:29	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		07/09/18 14:29	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/09/18 14:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW1s **Lab ID: 10437889008** Collected: 06/26/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:20	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:20	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:20	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:20	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 04:20	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:20	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:20	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:20	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 04:20	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 04:20	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:20	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:20	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 04:20	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 04:20	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:20	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 04:20	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 04:20	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 04:20	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:20	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:20	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 04:20	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:20	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 04:20	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 04:20	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 04:20	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 04:20	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:20	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 04:20	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 04:20	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 04:20	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 04:20	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 04:20	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 04:20	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 04:20	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 04:20	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 04:20	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 04:20	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 04:20	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 04:20	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 04:20	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 04:20	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:20	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 04:20	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 04:20	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 04:20	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:20	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: 062618-MW1s **Lab ID: 10437889008** Collected: 06/26/18 16:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 04:20	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 04:20	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 04:20	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 04:20	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:20	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 04:20	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 04:20	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:20	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:20	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/07/18 04:20	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 04:20	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 04:20	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 04:20	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 04:20	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 04:20	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 04:20	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 04:20	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 04:20	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 04:20	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 04:20	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:20	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 04:20	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 04:20	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 04:20	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 04:20	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 04:20	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:20	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:20	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 04:20	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 04:20	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 04:20	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 04:20	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 04:20	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 04:20	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		07/07/18 04:20	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 04:20	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		07/07/18 04:20	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Sample: Trip Blank **Lab ID: 10437889009** Collected: 06/26/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/07/18 00:25	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/07/18 00:25	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 00:25	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/07/18 00:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/07/18 00:25	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/07/18 00:25	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 00:25	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 00:25	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 00:25	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/07/18 00:25	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 00:25	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 00:25	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/07/18 00:25	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/07/18 00:25	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 00:25	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 00:25	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/07/18 00:25	540-59-0	
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 00:25	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 00:25	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 00:25	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/07/18 00:25	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 00:25	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/07/18 00:25	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/07/18 00:25	540-84-1	
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/07/18 00:25	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/07/18 00:25	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 00:25	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/07/18 00:25	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/07/18 00:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/07/18 00:25	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/07/18 00:25	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/07/18 00:25	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/07/18 00:25	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 00:25	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/07/18 00:25	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/07/18 00:25	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/07/18 00:25	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/07/18 00:25	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/07/18 00:25	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/07/18 00:25	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/07/18 00:25	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 00:25	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/07/18 00:25	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/07/18 00:25	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/07/18 00:25	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/07/18 00:25	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10437889

Sample: Trip Blank **Lab ID: 10437889009** Collected: 06/26/18 00:00 Received: 06/30/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/07/18 00:25	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/07/18 00:25	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/07/18 00:25	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/07/18 00:25	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/07/18 00:25	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/07/18 00:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 00:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/07/18 00:25	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/07/18 00:25	1634-04-4	
Methylene Chloride	**1.1J**	ug/L	4.0	0.98	1		07/07/18 00:25	75-09-2	B
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/07/18 00:25	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		07/07/18 00:25	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/07/18 00:25	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/07/18 00:25	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/07/18 00:25	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/07/18 00:25	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/07/18 00:25	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/07/18 00:25	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/07/18 00:25	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/07/18 00:25	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 00:25	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/07/18 00:25	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/07/18 00:25	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/07/18 00:25	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/07/18 00:25	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/07/18 00:25	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 00:25	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 00:25	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/07/18 00:25	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/07/18 00:25	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/07/18 00:25	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/07/18 00:25	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/07/18 00:25	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/07/18 00:25	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1		07/07/18 00:25	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		07/07/18 00:25	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		07/07/18 00:25	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

QC Batch: 548930 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437889004

METHOD BLANK: 2983983 Matrix: Water
Associated Lab Samples: 10437889004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/06/18 11:43	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/06/18 11:43	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/06/18 11:43	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/06/18 11:43	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/06/18 11:43	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/06/18 11:43	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/06/18 11:43	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/06/18 11:43	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/06/18 11:43	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/06/18 11:43	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/06/18 11:43	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/06/18 11:43	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/06/18 11:43	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/06/18 11:43	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/06/18 11:43	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/06/18 11:43	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/06/18 11:43	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/06/18 11:43	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/06/18 11:43	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/06/18 11:43	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/06/18 11:43	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/06/18 11:43	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/06/18 11:43	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/06/18 11:43	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/06/18 11:43	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/06/18 11:43	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/06/18 11:43	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/06/18 11:43	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/06/18 11:43	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/06/18 11:43	
Acetone	ug/L	<9.2	20.0	9.2	07/06/18 11:43	
Acrolein	ug/L	<1.2	10.0	1.2	07/06/18 11:43	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/06/18 11:43	
Benzene	ug/L	<0.10	0.50	0.10	07/06/18 11:43	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/06/18 11:43	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/06/18 11:43	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/06/18 11:43	
Bromoform	ug/L	<0.80	4.0	0.80	07/06/18 11:43	
Bromomethane	ug/L	<1.8	4.0	1.8	07/06/18 11:43	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/06/18 11:43	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/06/18 11:43	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

METHOD BLANK: 2983983 Matrix: Water
Associated Lab Samples: 10437889004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/06/18 11:43	
Chloroethane	ug/L	<0.49	1.0	0.49	07/06/18 11:43	
Chloroform	ug/L	<0.45	1.0	0.45	07/06/18 11:43	
Chloromethane	ug/L	<0.16	4.0	0.16	07/06/18 11:43	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/06/18 11:43	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/06/18 11:43	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/06/18 11:43	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/06/18 11:43	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/06/18 11:43	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/06/18 11:43	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/06/18 11:43	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/06/18 11:43	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/06/18 11:43	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/06/18 11:43	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/06/18 11:43	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/06/18 11:43	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/06/18 11:43	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/06/18 11:43	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/06/18 11:43	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/06/18 11:43	
Naphthalene	ug/L	<0.48	1.0	0.48	07/06/18 11:43	
o-Xylene	ug/L	<0.16	0.50	0.16	07/06/18 11:43	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/06/18 11:43	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/06/18 11:43	
Styrene	ug/L	<0.19	0.50	0.19	07/06/18 11:43	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/06/18 11:43	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/06/18 11:43	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/06/18 11:43	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/06/18 11:43	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/06/18 11:43	
Toluene	ug/L	<0.083	0.50	0.083	07/06/18 11:43	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/06/18 11:43	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/06/18 11:43	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/06/18 11:43	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/06/18 11:43	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/06/18 11:43	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/06/18 11:43	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/06/18 11:43	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/06/18 11:43	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/06/18 11:43	
4-Bromofluorobenzene (S)	%.	99	75-125		07/06/18 11:43	
Toluene-d8 (S)	%.	100	75-125		07/06/18 11:43	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE: 2983984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.2	101	75-125	
1,1,1-Trichloroethane	ug/L	20	21.4	107	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.9	104	75-125	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.7	113	72-125	
1,1-Dichloroethane	ug/L	20	22.0	110	75-125	
1,1-Dichloroethene	ug/L	20	21.3	106	73-125	
1,1-Dichloropropene	ug/L	20	21.6	108	73-125	
1,2,3-Trichlorobenzene	ug/L	20	21.4	107	72-130	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.4	102	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.3	102	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	43.7	87	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.6	108	75-125	
1,2-Dichlorobenzene	ug/L	20	20.3	102	75-125	
1,2-Dichloroethane	ug/L	20	21.6	108	75-125	
1,2-Dichloroethene (Total)	ug/L	40	43.0	107	75-125	N2
1,2-Dichloropropane	ug/L	20	21.7	109	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.5	103	75-125	
1,3-Dichlorobenzene	ug/L	20	20.9	105	75-125	
1,3-Dichloropropane	ug/L	20	21.3	106	75-125	
1,4-Dichlorobenzene	ug/L	20	21.2	106	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	457	114	75-125	
2,2,4-Trimethylpentane	ug/L	20	22.4	112	64-130	N2
2,2-Dichloropropane	ug/L	20	20.1	100	68-129	
2-Butanone (MEK)	ug/L	100	119	119	65-126	
2-Chlorotoluene	ug/L	20	19.8	99	75-125	
2-Hexanone	ug/L	100	105	105	75-134	
4-Chlorotoluene	ug/L	20	20.5	102	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	223	112	63-149	
Acrylonitrile	ug/L	200	230	115	75-125	
Benzene	ug/L	20	21.9	109	75-125	
Bromobenzene	ug/L	20	20.3	102	75-125	
Bromochloromethane	ug/L	20	21.8	109	75-125	
Bromodichloromethane	ug/L	20	20.2	101	75-125	
Bromoform	ug/L	20	15.8	79	70-125	
Bromomethane	ug/L	20	18.5	93	30-145	
Carbon disulfide	ug/L	20	19.2	96	67-125	
Carbon tetrachloride	ug/L	20	19.7	99	75-125	
Chlorobenzene	ug/L	20	20.6	103	75-125	
Chloroethane	ug/L	20	24.1	120	73-131	
Chloroform	ug/L	20	22.0	110	75-125	
Chloromethane	ug/L	20	21.2	106	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.6	108	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.6	98	75-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE: 2983984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.8	94	75-125	
Dibromomethane	ug/L	20	20.8	104	75-125	
Dichlorodifluoromethane	ug/L	20	22.0	110	64-127	
Dichlorofluoromethane	ug/L	20	22.2	111	75-125	N2
Diisopropyl ether	ug/L	20	22.2	111	75-125	
Ethyl-tert-butyl ether	ug/L	20	21.0	105	75-125	
Ethylbenzene	ug/L	20	20.9	105	75-125	
Hexachloro-1,3-butadiene	ug/L	20	22.1	110	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.7	103	75-125	
m&p-Xylene	ug/L	40	42.4	106	75-125	
Methyl-tert-butyl ether	ug/L	20	20.6	103	75-125	
Methylene Chloride	ug/L	20	21.2	106	72-125	
n-Butylbenzene	ug/L	20	21.9	109	75-125	
n-Propylbenzene	ug/L	20	20.7	103	75-125	
Naphthalene	ug/L	20	19.3	97	61-136	
o-Xylene	ug/L	20	20.6	103	75-125	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	20.8	104	75-125	
Styrene	ug/L	20	21.1	106	75-125	
tert-Amylmethyl ether	ug/L	20	19.6	98	75-125	
tert-Butyl Alcohol	ug/L	200	222	111	75-125	
tert-Butylbenzene	ug/L	20	20.3	101	75-125	
Tetrachloroethene	ug/L	20	21.3	107	75-125	
Tetrahydrofuran	ug/L	200	208	104	64-150	
Toluene	ug/L	20	20.5	102	75-125	
trans-1,2-Dichloroethene	ug/L	20	21.4	107	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.3	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	42.5	85	57-126	
Trichloroethene	ug/L	20	21.7	109	75-125	
Trichlorofluoromethane	ug/L	20	22.3	111	74-126	
Vinyl acetate	ug/L	20	20.8	104	72-129	
Vinyl chloride	ug/L	20	22.5	112	71-130	
Xylene (Total)	ug/L	60	63.0	105	75-125	
1,2-Dichloroethane-d4 (S)	%.			105	75-125	
4-Bromofluorobenzene (S)	%.			95	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985631 2985632

Parameter	Units	10438654001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.9	17.4	100	87	75-125	13	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	22.3	19.8	112	99	75-129	12	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.0	19.3	110	96	75-125	13	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.3	18.2	102	91	75-125	11	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985631 2985632

Parameter	Units	10438654001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	25.1	22.0	125	110	75-136	13	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	22.1	19.6	111	98	75-125	12	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	23.8	21.3	119	107	75-127	11	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	23.1	20.3	115	102	75-129	13	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.6	20.9	113	105	72-137	8	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.7	18.6	103	93	75-125	11	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.6	18.7	108	93	69-131	14	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.6	18.2	103	91	71-125	13	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	44.0	39.2	88	78	61-127	11	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.9	19.3	110	97	75-125	12	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.5	18.3	103	91	75-125	12	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	21.1	18.9	105	94	69-125	11	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	45.0	40.1	112	100	75-125	12	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.9	19.4	109	97	75-125	12	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.1	18.4	105	92	75-125	14	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	19.0	105	95	75-125	10	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.4	18.9	107	94	75-125	13	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	18.9	104	94	74-125	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	442	388	110	97	67-128	13	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	25.5	21.5	127	107	65-150	17	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	21.4	19.0	107	95	65-136	12	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	112	101	112	101	59-125	10	30	
2-Chlorotoluene	ug/L	<0.16	20	20	19.5	17.3	98	87	73-126	12	30	
2-Hexanone	ug/L	<0.88	100	100	101	89.4	101	89	68-138	12	30	
4-Chlorotoluene	ug/L	<0.13	20	20	20.5	18.3	102	91	75-125	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	104	92.1	104	92	73-125	12	30	
Acetone	ug/L	12.8J	100	100	111	96.1	98	83	75-150	14	30	
Acrolein	ug/L	<1.2	200	200	215	190	107	95	53-150	12	30	
Acrylonitrile	ug/L	<0.91	200	200	218	196	109	98	69-127	10	30	
Benzene	ug/L	<0.10	20	20	22.4	19.7	112	99	74-125	13	30	
Bromobenzene	ug/L	<0.21	20	20	21.0	17.9	105	89	75-125	16	30	
Bromochloromethane	ug/L	<0.27	20	20	21.3	18.9	107	94	75-125	12	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.0	17.4	100	87	75-125	14	30	
Bromoform	ug/L	<0.80	20	20	16.4	14.1	82	71	68-125	15	30	
Bromomethane	ug/L	<1.8	20	20	17.4	17.9	87	90	37-149	3	30	
Carbon disulfide	ug/L	<0.078	20	20	21.0	18.1	105	91	66-139	15	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	18.6	105	93	75-127	12	30	
Chlorobenzene	ug/L	<0.17	20	20	20.6	18.5	103	93	75-125	11	30	
Chloroethane	ug/L	<0.49	20	20	19.8	20.8	99	104	73-134	5	30	
Chloroform	ug/L	<0.45	20	20	21.5	18.8	107	94	71-125	13	30	
Chloromethane	ug/L	<0.16	20	20	18.0	18.8	90	94	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.8	19.6	109	98	75-125	10	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.2	16.6	96	83	71-125	15	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.9	16.9	95	84	75-125	12	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985631 2985632

Parameter	Units	10438654001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	20.6	17.8	103	89	75-125	15	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	19.8	20.5	99	102	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.1	19.8	95	99	75-126	4	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	21.8	19.4	109	97	66-131	11	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.4	18.2	102	91	74-125	11	30	
Ethylbenzene	ug/L	<0.14	20	20	20.6	18.4	103	92	75-125	11	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.6	21.6	128	108	60-150	17	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	18.8	104	94	75-125	11	30	
m&p-Xylene	ug/L	<0.31	40	40	41.3	37.4	103	93	75-125	10	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.5	18.3	103	92	75-125	11	30	
Methylene Chloride	ug/L	<0.98	20	20	20.9	18.6	101	89	72-125	12	30	
n-Butylbenzene	ug/L	<0.24	20	20	24.2	20.6	121	103	73-140	16	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.8	18.4	104	92	75-126	12	30	
Naphthalene	ug/L	<0.48	20	20	20.0	18.3	100	92	61-136	9	30	
o-Xylene	ug/L	<0.16	20	20	20.7	18.4	104	92	75-125	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	19.1	111	96	73-133	14	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.8	19.1	109	96	75-132	13	30	
Styrene	ug/L	<0.19	20	20	21.0	18.6	105	93	71-125	12	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.5	17.5	97	88	71-125	10	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	225	201	112	101	72-130	11	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.1	18.2	105	91	75-126	14	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.9	19.5	109	97	75-125	11	30	
Tetrahydrofuran	ug/L	<2.2	200	200	195	171	97	86	75-150	13	30	
Toluene	ug/L	<0.083	20	20	20.9	18.1	104	91	74-125	14	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	23.2	20.4	116	102	75-125	13	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.9	17.6	105	88	70-125	17	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	43.1	38.0	86	76	57-125	12	30	
Trichloroethene	ug/L	<0.15	20	20	22.3	19.6	112	98	75-125	13	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	20.2	98	101	75-135	3	30	
Vinyl acetate	ug/L	<1.1	20	20	22.2	20.0	111	100	57-136	10	30	
Vinyl chloride	ug/L	<0.092	20	20	19.9	20.7	100	104	74-141	4	30	
Xylene (Total)	ug/L	<0.31	60	60	62.0	55.8	103	93	75-125	11	30	
1,2-Dichloroethane-d4 (S)	%.						103	105	75-125			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						101	100	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

QC Batch: 548931 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437889001, 10437889002, 10437889003, 10437889005, 10437889006, 10437889008, 10437889009

METHOD BLANK: 2983988 Matrix: Water
Associated Lab Samples: 10437889001, 10437889002, 10437889003, 10437889005, 10437889006, 10437889008, 10437889009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/07/18 00:01	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/07/18 00:01	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/07/18 00:01	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/07/18 00:01	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/07/18 00:01	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/07/18 00:01	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/07/18 00:01	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/07/18 00:01	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/07/18 00:01	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/07/18 00:01	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/07/18 00:01	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/07/18 00:01	
Acetone	ug/L	<9.2	20.0	9.2	07/07/18 00:01	
Acrolein	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/07/18 00:01	
Benzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/07/18 00:01	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/07/18 00:01	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/07/18 00:01	
Bromoform	ug/L	<0.80	4.0	0.80	07/07/18 00:01	
Bromomethane	ug/L	<1.8	4.0	1.8	07/07/18 00:01	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/07/18 00:01	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/07/18 00:01	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

METHOD BLANK: 2983988 Matrix: Water
Associated Lab Samples: 10437889001, 10437889002, 10437889003, 10437889005, 10437889006, 10437889008, 10437889009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Chloroethane	ug/L	<0.49	1.0	0.49	07/07/18 00:01	
Chloroform	ug/L	<0.45	1.0	0.45	07/07/18 00:01	
Chloromethane	ug/L	<0.16	4.0	0.16	07/07/18 00:01	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/07/18 00:01	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/07/18 00:01	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/07/18 00:01	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/07/18 00:01	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/07/18 00:01	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/07/18 00:01	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/07/18 00:01	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
Methylene Chloride	ug/L	1.2J	4.0	0.98	07/07/18 00:01	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/07/18 00:01	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/07/18 00:01	
Naphthalene	ug/L	<0.48	1.0	0.48	07/07/18 00:01	
o-Xylene	ug/L	<0.16	0.50	0.16	07/07/18 00:01	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Styrene	ug/L	<0.19	0.50	0.19	07/07/18 00:01	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/07/18 00:01	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/07/18 00:01	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/07/18 00:01	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/07/18 00:01	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/07/18 00:01	
Toluene	ug/L	<0.083	0.50	0.083	07/07/18 00:01	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/07/18 00:01	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/07/18 00:01	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/07/18 00:01	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/07/18 00:01	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/07/18 00:01	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/07/18 00:01	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/07/18 00:01	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/07/18 00:01	
1,2-Dichloroethane-d4 (S)	%.	106	75-125		07/07/18 00:01	
4-Bromofluorobenzene (S)	%.	99	75-125		07/07/18 00:01	
Toluene-d8 (S)	%.	96	75-125		07/07/18 00:01	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	75-125	
1,1,1-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	75-125	
1,1,2-Trichloroethane	ug/L	20	20.1	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.7	109	72-125	
1,1-Dichloroethane	ug/L	20	21.2	106	75-125	
1,1-Dichloroethene	ug/L	20	20.7	104	73-125	
1,1-Dichloropropene	ug/L	20	20.3	101	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.6	98	72-130	
1,2,3-Trichloropropane	ug/L	20	20.9	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	41.2	82	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	75-125	
1,2-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,2-Dichloroethane	ug/L	20	20.9	104	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.5	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.8	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.4	97	75-125	
1,3-Dichlorobenzene	ug/L	20	20.5	103	75-125	
1,3-Dichloropropane	ug/L	20	20.7	104	75-125	
1,4-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	442	111	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.3	96	64-130	N2
2,2-Dichloropropane	ug/L	20	17.5	87	68-129	
2-Butanone (MEK)	ug/L	100	122	122	65-126	
2-Chlorotoluene	ug/L	20	18.9	95	75-125	
2-Hexanone	ug/L	100	102	102	75-134	
4-Chlorotoluene	ug/L	20	19.4	97	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	218	109	63-149	
Acrylonitrile	ug/L	200	227	113	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	19.5	97	75-125	
Bromochloromethane	ug/L	20	20.8	104	75-125	
Bromodichloromethane	ug/L	20	18.5	93	75-125	
Bromoform	ug/L	20	15.3	77	70-125	
Bromomethane	ug/L	20	18.5	92	30-145	
Carbon disulfide	ug/L	20	16.9	84	67-125	
Carbon tetrachloride	ug/L	20	19.1	95	75-125	
Chlorobenzene	ug/L	20	19.8	99	75-125	
Chloroethane	ug/L	20	22.5	112	73-131	
Chloroform	ug/L	20	20.9	105	75-125	
Chloromethane	ug/L	20	20.6	103	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.3	102	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.9	90	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE: 2983989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.6	88	75-125	
Dibromomethane	ug/L	20	20.0	100	75-125	
Dichlorodifluoromethane	ug/L	20	20.3	101	64-127	
Dichlorofluoromethane	ug/L	20	21.2	106	75-125	N2
Diisopropyl ether	ug/L	20	21.3	106	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.8	104	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.3	96	75-125	
m&p-Xylene	ug/L	40	39.9	100	75-125	
Methyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Methylene Chloride	ug/L	20	20.5	103	72-125	
n-Butylbenzene	ug/L	20	20.1	100	75-125	
n-Propylbenzene	ug/L	20	19.7	98	75-125	
Naphthalene	ug/L	20	17.7	88	61-136	
o-Xylene	ug/L	20	19.6	98	75-125	
p-Isopropyltoluene	ug/L	20	19.5	98	75-125	
sec-Butylbenzene	ug/L	20	19.8	99	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	18.9	94	75-125	
tert-Butyl Alcohol	ug/L	200	215	107	75-125	
tert-Butylbenzene	ug/L	20	19.0	95	75-125	
Tetrachloroethene	ug/L	20	20.3	101	75-125	
Tetrahydrofuran	ug/L	200	201	101	64-150	
Toluene	ug/L	20	19.4	97	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	75-125	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	40.5	81	57-126	
Trichloroethene	ug/L	20	21.5	108	75-125	
Trichlorofluoromethane	ug/L	20	21.3	106	74-126	
Vinyl acetate	ug/L	20	18.2	91	72-129	
Vinyl chloride	ug/L	20	21.5	107	71-130	
Xylene (Total)	ug/L	60	59.5	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			95	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.3	19.3	92	97	75-125	5	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.3	22.2	106	111	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.6	20.9	98	104	75-125	6	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.5	20.2	98	101	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.7	23.9	114	120	75-136	5	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.7	21.6	103	108	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	22.1	23.4	110	117	75-127	6	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	22.0	104	110	75-129	6	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.4	21.5	102	107	72-137	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.5	20.4	98	102	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.7	19.6	93	98	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.2	20.2	96	101	71-125	5	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	39.5	41.3	79	83	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.1	21.3	100	106	75-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.5	20.3	98	102	75-125	4	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.8	21.0	99	105	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.4	43.6	104	109	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.4	21.5	102	108	75-125	5	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.6	20.6	98	103	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.6	20.7	98	104	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.6	98	103	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.6	20.7	98	104	74-125	5	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	422	430	105	108	67-128	2	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.8	21.2	99	106	65-150	7	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.9	18.3	90	92	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	105	114	105	114	59-125	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	18.6	19.7	93	99	73-126	6	30	
2-Hexanone	ug/L	<0.88	100	100	94.4	96.2	94	96	68-138	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.3	20.1	96	100	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	98.8	101	99	101	73-125	2	30	
Acetone	ug/L	<9.2	100	100	93.0	99.5	93	100	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	194	209	97	105	53-150	8	30	
Acrylonitrile	ug/L	<0.91	200	200	202	213	101	107	69-127	5	30	
Benzene	ug/L	<0.10	20	20	20.3	21.4	102	107	74-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	19.0	20.8	95	104	75-125	9	30	
Bromochloromethane	ug/L	<0.27	20	20	20.1	21.2	100	106	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.5	19.2	92	96	75-125	4	30	
Bromoform	ug/L	<0.80	20	20	14.6	15.6	73	78	68-125	6	30	
Bromomethane	ug/L	<1.8	20	20	19.1	21.0	95	105	37-149	9	30	
Carbon disulfide	ug/L	0.12J	20	20	17.8	18.9	88	94	66-139	6	30	
Carbon tetrachloride	ug/L	202	20	20	220	238	86	177	75-127	8	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.6	20.5	98	102	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.7	106	108	73-134	2	30	
Chloroform	ug/L	8.8	20	20	29.0	30.0	101	106	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	20.2	20.4	101	102	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.4	21.4	102	107	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.7	18.0	84	90	71-125	7	30	
Dibromochloromethane	ug/L	<0.12	20	20	17.3	18.3	86	92	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983990 2983991

Parameter	Units	10437860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.9	19.5	95	97	75-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.2	21.8	106	109	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.0	21.3	105	106	75-126	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	20.7	21.7	104	108	66-131	4	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.7	20.0	94	100	74-125	7	30	
Ethylbenzene	ug/L	<0.14	20	20	19.9	20.6	99	103	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20.9	21.9	104	110	60-150	5	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.1	20.8	101	104	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	39.9	41.6	100	104	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.2	20.1	96	100	75-125	5	30	
Methylene Chloride	ug/L	<0.98	20	20	19.0	20.0	95	100	72-125	5	30	
n-Butylbenzene	ug/L	<0.24	20	20	20.3	22.0	102	110	73-140	8	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.4	20.7	97	104	75-126	7	30	
Naphthalene	ug/L	<0.48	20	20	18.7	19.9	93	99	61-136	6	30	
o-Xylene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-125	5	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.2	20.6	96	103	73-133	7	30	
sec-Butylbenzene	ug/L	<0.15	20	20	19.6	21.1	98	106	75-132	7	30	
Styrene	ug/L	<0.19	20	20	18.7	19.7	94	99	71-125	5	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.8	18.7	89	94	71-125	5	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	219	107	109	72-130	2	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.1	20.2	96	101	75-126	5	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	21.7	105	109	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	181	189	90	94	75-150	5	30	
Toluene	ug/L	<0.083	20	20	19.3	20.0	97	100	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.1	22.2	105	111	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.3	19.2	91	96	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	50.2	38.6	41.3	77	82	57-125	7	30	
Trichloroethene	ug/L	<0.15	20	20	20.5	21.4	102	107	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.2	21.6	106	108	75-135	2	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.7	89	94	57-136	5	30	
Vinyl chloride	ug/L	<0.092	20	20	22.1	22.7	110	113	74-141	3	30	
Xylene (Total)	ug/L	<0.31	60	60	59.6	62.4	99	104	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.						105	105	75-125			
4-Bromofluorobenzene (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

QC Batch: 549215 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10437889007

METHOD BLANK: 2985590 | Matrix: Water
Associated Lab Samples: 10437889007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/09/18 11:21	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/09/18 11:21	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/09/18 11:21	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/09/18 11:21	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/09/18 11:21	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/09/18 11:21	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/09/18 11:21	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/09/18 11:21	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/09/18 11:21	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/09/18 11:21	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/09/18 11:21	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/09/18 11:21	
Acetone	ug/L	<9.2	20.0	9.2	07/09/18 11:21	
Acrolein	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/09/18 11:21	
Benzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/09/18 11:21	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/09/18 11:21	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/09/18 11:21	
Bromoform	ug/L	<0.80	4.0	0.80	07/09/18 11:21	
Bromomethane	ug/L	<1.8	4.0	1.8	07/09/18 11:21	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/09/18 11:21	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/09/18 11:21	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

METHOD BLANK: 2985590 Matrix: Water
Associated Lab Samples: 10437889007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Chloroethane	ug/L	<0.49	1.0	0.49	07/09/18 11:21	
Chloroform	ug/L	<0.45	1.0	0.45	07/09/18 11:21	
Chloromethane	ug/L	<0.16	4.0	0.16	07/09/18 11:21	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/09/18 11:21	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/09/18 11:21	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/09/18 11:21	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/09/18 11:21	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/09/18 11:21	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/09/18 11:21	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/09/18 11:21	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/09/18 11:21	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/09/18 11:21	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/09/18 11:21	
Naphthalene	ug/L	<0.48	1.0	0.48	07/09/18 11:21	
o-Xylene	ug/L	<0.16	0.50	0.16	07/09/18 11:21	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Styrene	ug/L	<0.19	0.50	0.19	07/09/18 11:21	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/09/18 11:21	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/09/18 11:21	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/09/18 11:21	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/09/18 11:21	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/09/18 11:21	
Toluene	ug/L	<0.083	0.50	0.083	07/09/18 11:21	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/09/18 11:21	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/09/18 11:21	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/09/18 11:21	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/09/18 11:21	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/09/18 11:21	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/09/18 11:21	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/09/18 11:21	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/09/18 11:21	
1,2-Dichloroethane-d4 (S)	%.	104	75-125		07/09/18 11:21	
4-Bromofluorobenzene (S)	%.	97	75-125		07/09/18 11:21	
Toluene-d8 (S)	%.	98	75-125		07/09/18 11:21	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.0	19.3	105	97	75-125	8	30	
1,1,1-Trichloroethane	ug/L	20	21.4	20.3	107	102	75-125	5	30	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	20.7	106	103	75-125	2	30	
1,1,2-Trichloroethane	ug/L	20	20.5	20.6	102	103	75-125	1	30	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	21.2	113	106	72-125	6	30	
1,1-Dichloroethane	ug/L	20	22.1	20.7	110	103	75-125	7	30	
1,1-Dichloroethene	ug/L	20	21.3	21.1	107	105	73-125	1	30	
1,1-Dichloropropene	ug/L	20	21.0	20.0	105	100	73-125	5	30	
1,2,3-Trichlorobenzene	ug/L	20	20.0	21.7	100	109	72-130	8	30	
1,2,3-Trichloropropane	ug/L	20	21.0	21.0	105	105	75-125	0	30	
1,2,4-Trichlorobenzene	ug/L	20	18.9	20.5	94	103	75-125	8	30	
1,2,4-Trimethylbenzene	ug/L	20	19.3	18.6	96	93	75-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	45.7	91	91	64-133	1	30	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	20.9	109	105	75-125	4	30	
1,2-Dichlorobenzene	ug/L	20	19.8	19.3	99	97	75-125	2	30	
1,2-Dichloroethane	ug/L	20	21.3	20.6	107	103	75-125	4	30	
1,2-Dichloroethene (Total)	ug/L	40	42.6	40.8	107	102	75-125	4	30	N2
1,2-Dichloropropane	ug/L	20	21.4	20.5	107	102	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	20	19.3	19.1	96	96	75-125	1	30	
1,3-Dichlorobenzene	ug/L	20	20.6	19.9	103	100	75-125	3	30	
1,3-Dichloropropane	ug/L	20	21.0	20.5	105	103	75-125	2	30	
1,4-Dichlorobenzene	ug/L	20	20.4	19.7	102	99	75-125	3	30	
1,4-Dioxane (p-Dioxane)	ug/L	400	467	440	117	110	75-125	6	30	
2,2,4-Trimethylpentane	ug/L	20	21.9	22.8	110	114	64-130	4	30	N2
2,2-Dichloropropane	ug/L	20	20.3	19.0	102	95	68-129	6	30	
2-Butanone (MEK)	ug/L	100	125	118	125	118	65-126	6	30	
2-Chlorotoluene	ug/L	20	18.9	17.5	94	88	75-125	7	30	
2-Hexanone	ug/L	100	103	99.4	103	99	75-134	4	30	
4-Chlorotoluene	ug/L	20	19.7	18.7	99	94	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	104	109	104	75-131	4	30	
Acetone	ug/L	100	108	106	108	106	68-150	2	30	
Acrolein	ug/L	200	226	215	113	108	63-149	5	30	
Acrylonitrile	ug/L	200	236	231	118	116	75-125	2	30	
Benzene	ug/L	20	21.5	20.6	107	103	75-125	4	30	
Bromobenzene	ug/L	20	19.7	19.1	98	96	75-125	3	30	
Bromochloromethane	ug/L	20	21.9	21.1	109	105	75-125	4	30	
Bromodichloromethane	ug/L	20	21.1	20.2	105	101	75-125	4	30	
Bromoform	ug/L	20	18.8	18.2	94	91	70-125	3	30	
Bromomethane	ug/L	20	12.7	12.6	63	63	30-145	1	30	
Carbon disulfide	ug/L	20	19.5	19.0	98	95	67-125	3	30	
Carbon tetrachloride	ug/L	20	21.1	19.7	106	98	75-125	7	30	
Chlorobenzene	ug/L	20	20.3	19.3	102	96	75-125	5	30	
Chloroethane	ug/L	20	22.5	21.9	113	110	73-131	3	30	
Chloroform	ug/L	20	21.7	20.5	109	102	75-125	6	30	
Chloromethane	ug/L	20	17.2	16.5	86	82	52-132	4	30	
cis-1,2-Dichloroethene	ug/L	20	21.2	20.2	106	101	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	20	20.1	18.9	100	94	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

LABORATORY CONTROL SAMPLE & LCSD: 2985591 2985592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dibromochloromethane	ug/L	20	20.5	19.6	103	98	75-125	5	30	
Dibromomethane	ug/L	20	21.2	20.6	106	103	75-125	3	30	
Dichlorodifluoromethane	ug/L	20	20.6	20.2	103	101	64-127	2	30	
Dichlorofluoromethane	ug/L	20	21.3	20.7	107	103	75-125	3	30	N2
Diisopropyl ether	ug/L	20	22.2	21.1	111	106	75-125	5	30	
Ethyl-tert-butyl ether	ug/L	20	20.2	19.6	101	98	75-125	3	30	
Ethylbenzene	ug/L	20	20.5	19.1	103	95	75-125	7	30	
Hexachloro-1,3-butadiene	ug/L	20	21.5	24.1	108	120	75-130	11	30	
Isopropylbenzene (Cumene)	ug/L	20	20.3	18.6	102	93	75-125	9	30	
m&p-Xylene	ug/L	40	41.4	38.4	104	96	75-125	8	30	
Methyl-tert-butyl ether	ug/L	20	20.1	19.4	101	97	75-125	4	30	
Methylene Chloride	ug/L	20	21.1	20.4	105	102	72-125	3	30	
n-Butylbenzene	ug/L	20	20.7	21.1	104	105	75-125	2	30	
n-Propylbenzene	ug/L	20	19.8	18.6	99	93	75-125	6	30	
Naphthalene	ug/L	20	17.7	18.3	88	91	61-136	3	30	
o-Xylene	ug/L	20	19.5	18.8	98	94	75-125	4	30	
p-Isopropyltoluene	ug/L	20	19.2	19.5	96	98	75-125	2	30	
sec-Butylbenzene	ug/L	20	19.8	19.5	99	97	75-125	2	30	
Styrene	ug/L	20	20.3	19.1	101	96	75-125	6	30	
tert-Amylmethyl ether	ug/L	20	18.8	18.0	94	90	75-125	4	30	
tert-Butyl Alcohol	ug/L	200	246	232	123	116	75-125	6	30	
tert-Butylbenzene	ug/L	20	18.8	18.4	94	92	75-125	2	30	
Tetrachloroethene	ug/L	20	21.0	19.8	105	99	75-125	6	30	
Tetrahydrofuran	ug/L	200	201	195	100	97	64-150	3	30	
Toluene	ug/L	20	20.1	19.0	101	95	75-125	6	30	
trans-1,2-Dichloroethene	ug/L	20	21.4	20.6	107	103	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	20	21.0	20.2	105	101	75-125	4	30	
trans-1,4-Dichloro-2-butene	ug/L	50.2	46.3	46.1	92	92	57-126	0	30	
Trichloroethene	ug/L	20	21.8	20.5	109	102	75-125	6	30	
Trichlorofluoromethane	ug/L	20	21.3	20.3	106	102	74-126	5	30	
Vinyl acetate	ug/L	20	21.0	20.4	105	102	72-129	3	30	
Vinyl chloride	ug/L	20	21.3	20.7	107	104	71-130	3	30	
Xylene (Total)	ug/L	60	60.9	57.1	102	95	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.				103	104	75-125			
4-Bromofluorobenzene (S)	%.				94	96	75-125			
Toluene-d8 (S)	%.				97	99	75-125			

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	18.2	91	75-125	
1,1,1-Trichloroethane	ug/L	<0.14	20	20.9	105	75-129	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20.1	101	75-125	
1,1,2-Trichloroethane	ug/L	<0.18	20	19.4	97	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	22.4	112	75-136	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	<0.17	20	20.3	101	75-125	
1,1-Dichloroethene	ug/L	<0.16	20	21.8	109	75-127	
1,1-Dichloropropene	ug/L	<0.20	20	20.7	103	75-129	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20.4	102	72-137	
1,2,3-Trichloropropane	ug/L	<0.26	20	19.0	95	75-125	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	18.6	93	69-131	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	17.7	88	71-125	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	43.4	87	61-127	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20.2	101	75-125	
1,2-Dichlorobenzene	ug/L	<0.14	20	17.8	89	75-125	
1,2-Dichloroethane	ug/L	<0.22	20	19.6	98	69-125	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40.4	101	75-125	N2
1,2-Dichloropropane	ug/L	<0.16	20	19.7	98	75-125	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	18.0	90	75-125	
1,3-Dichlorobenzene	ug/L	<0.16	20	18.6	93	75-125	
1,3-Dichloropropane	ug/L	<0.070	20	19.2	96	75-125	
1,4-Dichlorobenzene	ug/L	<0.17	20	18.4	92	74-125	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	411	103	67-128	
2,2,4-Trimethylpentane	ug/L	<0.19	20	21.8	109	65-150	N2
2,2-Dichloropropane	ug/L	<0.17	20	19.5	97	65-136	
2-Butanone (MEK)	ug/L	<0.99	100	114	114	59-125	
2-Chlorotoluene	ug/L	<0.16	20	17.0	85	73-126	
2-Hexanone	ug/L	<0.88	100	96.3	96	68-138	
4-Chlorotoluene	ug/L	<0.13	20	17.7	89	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	73-125	
Acetone	ug/L	<9.2	100	93.9	94	75-150	
Acrolein	ug/L	<1.2	200	208	104	53-150	
Acrylonitrile	ug/L	<0.91	200	209	104	69-127	
Benzene	ug/L	<0.10	20	20.2	101	74-125	
Bromobenzene	ug/L	<0.21	20	18.2	91	75-125	
Bromochloromethane	ug/L	<0.27	20	20.0	100	75-125	
Bromodichloromethane	ug/L	<0.22	20	19.4	97	75-125	
Bromoform	ug/L	<0.80	20	16.9	84	68-125	
Bromomethane	ug/L	<1.8	20	13.2	66	37-149	
Carbon disulfide	ug/L	0.54J	20	19.5	95	66-139	
Carbon tetrachloride	ug/L	584	20	680	483	75-127	E,M1
Chlorobenzene	ug/L	<0.17	20	18.6	93	75-125	
Chloroethane	ug/L	<0.49	20	20.5	103	73-134	
Chloroform	ug/L	16.7	20	35.8	95	71-125	
Chloromethane	ug/L	<0.16	20	14.8	74	58-133	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	<0.20	20	17.9	89	71-125	
Dibromochloromethane	ug/L	<0.12	20	19.1	95	75-125	
Dibromomethane	ug/L	<0.16	20	19.9	100	75-125	
Dichlorodifluoromethane	ug/L	<0.23	20	19.5	98	70-150	
Dichlorofluoromethane	ug/L	<0.14	20	19.2	96	75-126	N2
Diisopropyl ether	ug/L	<0.13	20	20.2	101	66-131	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

MATRIX SPIKE SAMPLE: 2985595

Parameter	Units	10437877002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Ethyl-tert-butyl ether	ug/L	<0.18	20	18.3	91	74-125	
Ethylbenzene	ug/L	<0.14	20	18.5	93	75-125	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	22.5	112	60-150	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	18.5	92	75-125	
m&p-Xylene	ug/L	<0.31	40	37.1	93	75-125	
Methyl-tert-butyl ether	ug/L	<0.16	20	18.9	95	75-125	
Methylene Chloride	ug/L	<0.98	20	18.3	91	72-125	
n-Butylbenzene	ug/L	<0.24	20	20.1	101	73-140	
n-Propylbenzene	ug/L	<0.10	20	17.9	89	75-126	
Naphthalene	ug/L	<0.48	20	17.5	87	61-136	
o-Xylene	ug/L	<0.16	20	18.6	93	75-125	
p-Isopropyltoluene	ug/L	<0.15	20	17.5	87	73-133	
sec-Butylbenzene	ug/L	<0.15	20	18.4	92	75-132	
Styrene	ug/L	<0.19	20	18.5	92	71-125	
tert-Amylmethyl ether	ug/L	<0.11	20	17.5	88	71-125	
tert-Butyl Alcohol	ug/L	<1.2	200	217	109	72-130	
tert-Butylbenzene	ug/L	<0.15	20	17.6	88	75-126	
Tetrachloroethene	ug/L	<0.17	20	20.2	101	75-125	
Tetrahydrofuran	ug/L	<2.2	200	178	89	75-150	
Toluene	ug/L	<0.083	20	18.7	93	74-125	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20.5	102	75-125	
trans-1,3-Dichloropropene	ug/L	<0.18	20	19.0	95	70-125	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.2	42.5	85	57-125	
Trichloroethene	ug/L	<0.15	20	20.3	101	75-125	
Trichlorofluoromethane	ug/L	<0.23	20	19.5	98	75-135	
Vinyl acetate	ug/L	<1.1	20	21.1	105	57-136	
Vinyl chloride	ug/L	<0.092	20	20.2	101	74-141	
Xylene (Total)	ug/L	<0.31	60	55.7	93	75-125	
1,2-Dichloroethane-d4 (S)	%.				108	75-125	
4-Bromofluorobenzene (S)	%.				94	75-125	
Toluene-d8 (S)	%.				96	75-125	

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	<0.20		30	
1,1,1-Trichloroethane	ug/L	<0.14	<0.14		30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	<0.17		30	
1,1,2-Trichloroethane	ug/L	<0.18	<0.18		30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	<0.22		30	
1,1-Dichloroethane	ug/L	<0.17	<0.17		30	
1,1-Dichloroethene	ug/L	<0.16	<0.16		30	
1,1-Dichloropropene	ug/L	<0.20	<0.20		30	
1,2,3-Trichlorobenzene	ug/L	<0.21	<0.21		30	
1,2,3-Trichloropropane	ug/L	<0.26	<0.26		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.20	<0.20		30	
1,2,4-Trimethylbenzene	ug/L	<0.20	<0.20		30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	<1.7		30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	<0.24		30	
1,2-Dichlorobenzene	ug/L	<0.14	<0.14		30	
1,2-Dichloroethane	ug/L	<0.22	<0.22		30	
1,2-Dichloroethene (Total)	ug/L	<0.27	<0.27		30	N2
1,2-Dichloropropane	ug/L	<0.16	<0.16		30	
1,3,5-Trimethylbenzene	ug/L	<0.12	<0.12		30	
1,3-Dichlorobenzene	ug/L	<0.16	<0.16		30	
1,3-Dichloropropane	ug/L	<0.070	<0.070		30	
1,4-Dichlorobenzene	ug/L	<0.17	<0.17		30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	<16.3		30	
2,2,4-Trimethylpentane	ug/L	<0.19	<0.19		30	N2
2,2-Dichloropropane	ug/L	<0.17	<0.17		30	
2-Butanone (MEK)	ug/L	<0.99	<0.99		30	
2-Chlorotoluene	ug/L	<0.16	<0.16		30	
2-Hexanone	ug/L	<0.88	<0.88		30	
4-Chlorotoluene	ug/L	<0.13	<0.13		30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	<0.42		30	
Acetone	ug/L	10J	<9.2		30	
Acrolein	ug/L	<1.2	<1.2		30	
Acrylonitrile	ug/L	<0.91	<0.91		30	
Benzene	ug/L	<0.10	<0.10		30	
Bromobenzene	ug/L	<0.21	<0.21		30	
Bromochloromethane	ug/L	<0.27	<0.27		30	
Bromodichloromethane	ug/L	<0.22	<0.22		30	
Bromoform	ug/L	<0.80	<0.80		30	
Bromomethane	ug/L	<1.8	<1.8		30	
Carbon disulfide	ug/L	0.15J	0.15J		30	
Carbon tetrachloride	ug/L	<0.19	<0.19		30	
Chlorobenzene	ug/L	<0.17	<0.17		30	
Chloroethane	ug/L	<0.49	<0.49		30	
Chloroform	ug/L	<0.45	<0.45		30	
Chloromethane	ug/L	<0.16	<0.16		30	
cis-1,2-Dichloroethene	ug/L	<0.15	<0.15		30	
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20		30	
Dibromochloromethane	ug/L	<0.12	<0.12		30	
Dibromomethane	ug/L	<0.16	<0.16		30	
Dichlorodifluoromethane	ug/L	<0.23	<0.23		30	
Dichlorofluoromethane	ug/L	<0.14	<0.14		30	N2
Diisopropyl ether	ug/L	<0.13	<0.13		30	
Ethyl-tert-butyl ether	ug/L	<0.18	<0.18		30	
Ethylbenzene	ug/L	<0.14	<0.14		30	
Hexachloro-1,3-butadiene	ug/L	<0.31	<0.31		30	
Isopropylbenzene (Cumene)	ug/L	<0.18	<0.18		30	
m&p-Xylene	ug/L	<0.31	<0.31		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

SAMPLE DUPLICATE: 2985596

Parameter	Units	10437877003 Result	Dup Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ug/L	<0.16	<0.16		30	
Methylene Chloride	ug/L	<0.98	<0.98		30	
n-Butylbenzene	ug/L	<0.24	<0.24		30	
n-Propylbenzene	ug/L	<0.10	<0.10		30	
Naphthalene	ug/L	<0.48	<0.48		30	
o-Xylene	ug/L	<0.16	<0.16		30	
p-Isopropyltoluene	ug/L	<0.15	<0.15		30	
sec-Butylbenzene	ug/L	<0.15	<0.15		30	
Styrene	ug/L	<0.19	<0.19		30	
tert-Amylmethyl ether	ug/L	<0.11	<0.11		30	
tert-Butyl Alcohol	ug/L	<1.2	<1.2		30	
tert-Butylbenzene	ug/L	<0.15	<0.15		30	
Tetrachloroethene	ug/L	<0.17	<0.17		30	
Tetrahydrofuran	ug/L	<2.2	<2.2		30	
Toluene	ug/L	<0.083	<0.083		30	
trans-1,2-Dichloroethene	ug/L	<0.12	<0.12		30	
trans-1,3-Dichloropropene	ug/L	<0.18	<0.18		30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	<2.0		30	
Trichloroethene	ug/L	<0.15	<0.15		30	
Trichlorofluoromethane	ug/L	<0.23	<0.23		30	
Vinyl acetate	ug/L	<1.1	<1.1		30	
Vinyl chloride	ug/L	<0.092	<0.092		30	
Xylene (Total)	ug/L	<0.31	<0.31		30	
1,2-Dichloroethane-d4 (S)	%.	105	108	2		
4-Bromofluorobenzene (S)	%.	95	96	1		
Toluene-d8 (S)	%.	97	97	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10437889

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 549215

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10437889

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10437889001	**062618-MW6s**	EPA 8260B	548931		
10437889002	**062618-MW11s**	EPA 8260B	548931		
10437889003	**062618-MW10s**	EPA 8260B	548931		
10437889004	**062618-MW12s**	EPA 8260B	548930		
10437889005	**062618-MW8s**	EPA 8260B	548931		
10437889006	**062618-MW9s**	EPA 8260B	548931		
10437889007	**062618-MW7s**	EPA 8260B	549215		
10437889008	**062618-MW1s**	EPA 8260B	548931		
10437889009	**Trip Blank**	EPA 8260B	548931		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location: WA / Freeman

WO# : 10437889

10437889

MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		Pace Project No./ Lab I.D.
1	062618-MW6S	WT	G	6/26	1215	—	—	—	3				X				X												001
2	062618-MW11S	↓	↓	↓	1245	↓	↓	↓	↓				X				X												002
3	062618-MW10S				1320								X				X												003
4	062618-MW12S				1345								X				X												004
5	062618-MW8S				1410								X				X												005
6	062618-MW9S				1430								X				X												006
7	062618-MW7S				1545								X				X												007
8	062618-MW1S				1600								X				X												008
9	Trip Blank	↓	—	—	—	—	—	—	2				X				X												009
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	J. Ci / Jacobs	6/29/18	1530	[signature] Pace	6/30/18	930	X	Y	Y	Y
*Field filtered by client							4.8			
							3.7			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathon Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 6/26/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR - CH2M Hill

Project #:

WO#: 10437889
PM: JMG Due Date: 07/10/18
CLIENT: UPRR_CH2M

Optional: Proj. Due Date: Proj. Name:

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7448 1037 2369

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 4.7, 3.6 **Cooler Temp Corrected (°C):** 4.8, 3.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ERL 6/30/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8.
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 163526/150 PS4				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time:

Comments/Resolution: WA certs not required for 224-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1541	Temp: 4.8, 3.7	Corrected Temp:
Time: 1601	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/02/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce samples, a copy of th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
062618 - MW11S	0	2	1	3
" - MW10S	0	2	1	3
" - MW1S	0	2	1	3
TB	0	1	3	4

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July 31, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on July 18, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10439872

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10439872001	**WS5-GW-071718**	Water	07/17/18 12:00	07/18/18 09:30
10439872002	**TB-071718**	Water	07/17/18 00:00	07/18/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10439872001	**WS5-GW-071718**	EPA 8260B	AEZ	83	PASI-M
10439872002	**TB-071718**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10439872001	**WS5-GW-071718**					
EPA 8260B	Carbon tetrachloride	5.5	ug/L	0.50	07/31/18 04:30	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 551437

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 2996322)
  - 1,1,2,2-Tetrachloroethane
- MS (Lab ID: 2996323)
  - 1,1,2,2-Tetrachloroethane
- MSD (Lab ID: 2996324)
  - 1,1,2,2-Tetrachloroethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 551437

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 2996322)
  - 1,1,2,2-Tetrachloroethane

QC Batch: 553557

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3007496)
  - Carbon disulfide

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 551437

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10440427001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- MSD (Lab ID: 2996324)
  - 1,1,2,2-Tetrachloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2996323)
  - Acetone
  - Acrolein
  - Tetrahydrofuran
- MSD (Lab ID: 2996324)
  - Acrolein
  - Methylene Chloride

R1: RPD value was outside control limits.
- MSD (Lab ID: 2996324)
  - Bromomethane
  - Tetrahydrofuran

QC Batch: 553557

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10440437001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- MS (Lab ID: 3007951)
  - Carbon disulfide
- MSD (Lab ID: 3007952)
  - Carbon disulfide

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3007951)
  - 2,2,4-Trimethylpentane
  - Acrolein
- MSD (Lab ID: 3007952)
  - 2,2,4-Trimethylpentane
  - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 551437

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- BLANK (Lab ID: 2996321)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

Analyte Comments:

QC Batch: 551437

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 2996321)
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 2996322)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 2996323)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 2996324)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- TB-071718 (Lab ID: 10439872002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 553557

F1: The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

- MS (Lab ID: 3007951)
  - 1,2-Dichloroethane-d4 (S)
- MSD (Lab ID: 3007952)
  - 1,2-Dichloroethane-d4 (S)

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3007495)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3007496)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3007951)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3007952)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

Analyte Comments:

QC Batch: 553557

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- WS5-GW-071718 (Lab ID: 10439872001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Sample: WS5-GW-071718 **Lab ID: 10439872001** Collected: 07/17/18 12:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/31/18 04:30	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/31/18 04:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/31/18 04:30	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/31/18 04:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/31/18 04:30	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/31/18 04:30	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/31/18 04:30	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/31/18 04:30	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		07/31/18 04:30	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/31/18 04:30	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/31/18 04:30	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		07/31/18 04:30	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		07/31/18 04:30	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/31/18 04:30	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/31/18 04:30	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/31/18 04:30	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/31/18 04:30	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/31/18 04:30	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		07/31/18 04:30	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/31/18 04:30	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/31/18 04:30	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/31/18 04:30	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/31/18 04:30	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/31/18 04:30	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/31/18 04:30	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/31/18 04:30	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/31/18 04:30	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/31/18 04:30	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/31/18 04:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/31/18 04:30	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/31/18 04:30	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/31/18 04:30	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/31/18 04:30	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/31/18 04:30	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/31/18 04:30	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/31/18 04:30	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/31/18 04:30	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/31/18 04:30	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/31/18 04:30	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/31/18 04:30	75-15-0	
Carbon tetrachloride	**5.5**	ug/L	0.50	0.19	1		07/31/18 04:30	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/31/18 04:30	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/31/18 04:30	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/31/18 04:30	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/31/18 04:30	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/31/18 04:30	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Sample: WS5-GW-071718 **Lab ID: 10439872001** Collected: 07/17/18 12:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/31/18 04:30	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/31/18 04:30	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/31/18 04:30	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/31/18 04:30	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/31/18 04:30	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/31/18 04:30	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/31/18 04:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		07/31/18 04:30	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/31/18 04:30	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/31/18 04:30	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/31/18 04:30	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		07/31/18 04:30	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/31/18 04:30	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/31/18 04:30	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/31/18 04:30	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/31/18 04:30	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/31/18 04:30	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/31/18 04:30	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/31/18 04:30	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/31/18 04:30	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/31/18 04:30	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/31/18 04:30	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/31/18 04:30	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		07/31/18 04:30	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/31/18 04:30	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/31/18 04:30	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/31/18 04:30	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/31/18 04:30	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/31/18 04:30	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/31/18 04:30	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/31/18 04:30	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/31/18 04:30	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/31/18 04:30	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/31/18 04:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	116	%.	75-125		1		07/31/18 04:30	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		07/31/18 04:30	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		07/31/18 04:30	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Sample: TB-071718 **Lab ID: 10439872002** Collected: 07/17/18 00:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		07/19/18 20:58	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		07/19/18 20:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		07/19/18 20:58	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		07/19/18 20:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		07/19/18 20:58	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		07/19/18 20:58	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		07/19/18 20:58	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/19/18 20:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		07/19/18 20:58	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		07/19/18 20:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		07/19/18 20:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		07/19/18 20:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	10.0	1.7	1		07/19/18 20:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		07/19/18 20:58	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		07/19/18 20:58	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		07/19/18 20:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		07/19/18 20:58	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		07/19/18 20:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		07/19/18 20:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		07/19/18 20:58	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		07/19/18 20:58	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/19/18 20:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		07/19/18 20:58	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		07/19/18 20:58	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		07/19/18 20:58	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		07/19/18 20:58	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		07/19/18 20:58	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		07/19/18 20:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		07/19/18 20:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		07/19/18 20:58	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		07/19/18 20:58	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		07/19/18 20:58	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		07/19/18 20:58	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		07/19/18 20:58	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		07/19/18 20:58	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		07/19/18 20:58	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		07/19/18 20:58	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		07/19/18 20:58	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		07/19/18 20:58	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		07/19/18 20:58	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		07/19/18 20:58	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		07/19/18 20:58	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		07/19/18 20:58	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		07/19/18 20:58	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		07/19/18 20:58	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		07/19/18 20:58	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Sample: TB-071718 **Lab ID: 10439872002** Collected: 07/17/18 00:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		07/19/18 20:58	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		07/19/18 20:58	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		07/19/18 20:58	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		07/19/18 20:58	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		07/19/18 20:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		07/19/18 20:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		07/19/18 20:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		07/19/18 20:58	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		07/19/18 20:58	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		07/19/18 20:58	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		07/19/18 20:58	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		07/19/18 20:58	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		07/19/18 20:58	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		07/19/18 20:58	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		07/19/18 20:58	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		07/19/18 20:58	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		07/19/18 20:58	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		07/19/18 20:58	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		07/19/18 20:58	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		07/19/18 20:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		07/19/18 20:58	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		07/19/18 20:58	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		07/19/18 20:58	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		07/19/18 20:58	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		07/19/18 20:58	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		07/19/18 20:58	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		07/19/18 20:58	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/19/18 20:58	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		07/19/18 20:58	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		07/19/18 20:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		07/19/18 20:58	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		07/19/18 20:58	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		07/19/18 20:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		07/19/18 20:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	86	%.	75-125		1		07/19/18 20:58	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1		07/19/18 20:58	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		07/19/18 20:58	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

QC Batch: 551437 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10439872002

METHOD BLANK: 2996321 Matrix: Water
Associated Lab Samples: 10439872002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/19/18 18:32	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/19/18 18:32	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/19/18 18:32	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/19/18 18:32	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/19/18 18:32	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/19/18 18:32	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/19/18 18:32	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/19/18 18:32	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	07/19/18 18:32	MN
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/19/18 18:32	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/19/18 18:32	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	07/19/18 18:32	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	10.0	1.7	07/19/18 18:32	MN
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/19/18 18:32	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/19/18 18:32	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/19/18 18:32	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/19/18 18:32	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/19/18 18:32	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	07/19/18 18:32	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/19/18 18:32	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/19/18 18:32	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/19/18 18:32	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/19/18 18:32	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/19/18 18:32	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/19/18 18:32	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/19/18 18:32	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/19/18 18:32	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/19/18 18:32	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/19/18 18:32	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/19/18 18:32	
Acetone	ug/L	<9.2	20.0	9.2	07/19/18 18:32	
Acrolein	ug/L	<1.2	10.0	1.2	07/19/18 18:32	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/19/18 18:32	
Benzene	ug/L	<0.10	0.50	0.10	07/19/18 18:32	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/19/18 18:32	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/19/18 18:32	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/19/18 18:32	
Bromoform	ug/L	<0.80	4.0	0.80	07/19/18 18:32	
Bromomethane	ug/L	<1.8	4.0	1.8	07/19/18 18:32	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/19/18 18:32	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/19/18 18:32	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

METHOD BLANK: 2996321 Matrix: Water
Associated Lab Samples: 10439872002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/19/18 18:32	
Chloroethane	ug/L	<0.49	1.0	0.49	07/19/18 18:32	
Chloroform	ug/L	<0.45	1.0	0.45	07/19/18 18:32	
Chloromethane	ug/L	<0.16	4.0	0.16	07/19/18 18:32	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/19/18 18:32	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/19/18 18:32	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/19/18 18:32	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/19/18 18:32	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/19/18 18:32	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/19/18 18:32	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/19/18 18:32	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/19/18 18:32	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/19/18 18:32	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/19/18 18:32	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	07/19/18 18:32	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/19/18 18:32	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/19/18 18:32	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/19/18 18:32	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	07/19/18 18:32	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/19/18 18:32	
Naphthalene	ug/L	<0.48	1.0	0.48	07/19/18 18:32	
o-Xylene	ug/L	<0.16	0.50	0.16	07/19/18 18:32	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/19/18 18:32	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/19/18 18:32	
Styrene	ug/L	<0.19	1.0	0.19	07/19/18 18:32	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/19/18 18:32	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/19/18 18:32	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/19/18 18:32	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/19/18 18:32	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/19/18 18:32	
Toluene	ug/L	<0.083	0.50	0.083	07/19/18 18:32	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/19/18 18:32	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/19/18 18:32	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/19/18 18:32	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/19/18 18:32	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/19/18 18:32	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/19/18 18:32	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/19/18 18:32	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/19/18 18:32	
1,2-Dichloroethane-d4 (S)	%.	87	75-125		07/19/18 18:32	
4-Bromofluorobenzene (S)	%.	101	75-125		07/19/18 18:32	
Toluene-d8 (S)	%.	102	75-125		07/19/18 18:32	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

LABORATORY CONTROL SAMPLE: 2996322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	20	18.7	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	28.3	141	75-125	CH,L3
1,1,2-Trichloroethane	ug/L	20	21.3	107	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.9	90	72-125	
1,1-Dichloroethane	ug/L	20	18.1	90	75-125	
1,1-Dichloroethene	ug/L	20	17.2	86	73-125	
1,1-Dichloropropene	ug/L	20	18.2	91	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.0	100	72-130	
1,2,3-Trichloropropane	ug/L	20	22.8	114	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.5	103	75-125	
1,2,4-Trimethylbenzene	ug/L	20	19.2	96	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	58.2	116	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.6	108	75-125	
1,2-Dichlorobenzene	ug/L	20	20.2	101	75-125	
1,2-Dichloroethane	ug/L	20	16.7	83	75-125	
1,2-Dichloroethene (Total)	ug/L	40	35.6	89	75-125	N2
1,2-Dichloropropane	ug/L	20	21.2	106	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.5	98	75-125	
1,3-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,3-Dichloropropane	ug/L	20	21.7	109	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	440	110	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	64-130	N2
2,2-Dichloropropane	ug/L	20	19.4	97	68-129	
2-Butanone (MEK)	ug/L	100	91.8	92	65-126	
2-Chlorotoluene	ug/L	20	21.0	105	75-125	
2-Hexanone	ug/L	100	117	117	75-134	
4-Chlorotoluene	ug/L	20	20.9	104	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	116	116	75-131	
Acetone	ug/L	100	109	109	68-150	
Acrolein	ug/L	200	223	112	63-149	
Acrylonitrile	ug/L	200	192	96	75-125	
Benzene	ug/L	20	18.6	93	75-125	
Bromobenzene	ug/L	20	20.3	101	75-125	
Bromochloromethane	ug/L	20	17.8	89	75-125	
Bromodichloromethane	ug/L	20	20.4	102	75-125	
Bromoform	ug/L	20	20.6	103	70-125	
Bromomethane	ug/L	20	13.4	67	30-145	
Carbon disulfide	ug/L	20	18.1	91	67-125	
Carbon tetrachloride	ug/L	20	18.0	90	75-125	
Chlorobenzene	ug/L	20	21.1	105	75-125	
Chloroethane	ug/L	20	19.4	97	73-131	
Chloroform	ug/L	20	16.3	81	75-125	
Chloromethane	ug/L	20	17.1	86	52-132	
cis-1,2-Dichloroethene	ug/L	20	18.3	91	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.9	100	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

LABORATORY CONTROL SAMPLE: 2996322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.4	102	75-125	
Dibromomethane	ug/L	20	20.6	103	75-125	
Dichlorodifluoromethane	ug/L	20	18.6	93	64-127	
Dichlorofluoromethane	ug/L	20	19.0	95	75-125	N2
Diisopropyl ether	ug/L	20	16.4	82	75-125	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	21.6	108	75-125	
Hexachloro-1,3-butadiene	ug/L	20	23.2	116	75-130	
Isopropylbenzene (Cumene)	ug/L	20	19.7	98	75-125	
m&p-Xylene	ug/L	40	43.2	108	75-125	
Methyl-tert-butyl ether	ug/L	20	17.8	89	75-125	
Methylene Chloride	ug/L	20	16.9	85	72-125	
n-Butylbenzene	ug/L	20	20.5	103	75-125	
n-Propylbenzene	ug/L	20	21.9	110	75-125	
Naphthalene	ug/L	20	18.0	90	61-136	
o-Xylene	ug/L	20	21.8	109	75-125	
p-Isopropyltoluene	ug/L	20	20.7	104	75-125	
sec-Butylbenzene	ug/L	20	20.7	103	75-125	
Styrene	ug/L	20	20.3	101	75-125	
tert-Amylmethyl ether	ug/L	20	19.1	96	75-125	
tert-Butyl Alcohol	ug/L	200	219	110	75-125	
tert-Butylbenzene	ug/L	20	20.6	103	75-125	
Tetrachloroethene	ug/L	20	20.7	103	75-125	
Tetrahydrofuran	ug/L	200	228	114	64-150	
Toluene	ug/L	20	20.0	100	75-125	
trans-1,2-Dichloroethene	ug/L	20	17.3	87	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	54.0	108	57-126	
Trichloroethene	ug/L	20	19.2	96	75-125	
Trichlorofluoromethane	ug/L	20	17.7	88	74-126	
Vinyl acetate	ug/L	20	18.8	94	72-129	
Vinyl chloride	ug/L	20	18.6	93	71-130	
Xylene (Total)	ug/L	60	64.9	108	75-125	
1,2-Dichloroethane-d4 (S)	%.			83	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2996323 2996324

Parameter	Units	10440427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.50	20	20	18.2	18.8	91	94	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.50	20	20	19.1	18.6	96	93	75-129	3	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	20	20	22.9	25.4	114	127	75-125	10	30	CH,M0
1,1,2-Trichloroethane	ug/L	<0.50	20	20	17.3	18.7	87	93	75-125	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2996323 2996324

Parameter	Units	10440427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	20	20	19.2	17.6	96	88	75-136	8	30	
1,1-Dichloroethane	ug/L	<0.50	20	20	18.1	16.6	90	83	75-125	8	30	
1,1-Dichloroethene	ug/L	<0.50	20	20	19.1	16.9	95	85	75-127	12	30	
1,1-Dichloropropene	ug/L	<0.50	20	20	19.1	18.3	95	91	75-129	4	30	
1,2,3-Trichlorobenzene	ug/L	<1.0	20	20	17.6	18.6	88	93	72-137	6	30	
1,2,3-Trichloropropane	ug/L	<4.0	20	20	18.8	19.4	94	97	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	20	18.6	19.2	93	96	69-131	3	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	20	20	17.7	18.9	89	95	71-125	7	30	
1,2-Dibromo-3-chloropropane	ug/L	<10.0	50	50	48.4	52.4	97	105	61-127	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	20	17.8	18.8	89	94	75-125	5	30	
1,2-Dichlorobenzene	ug/L	<0.50	20	20	18.5	19.2	93	96	75-125	4	30	
1,2-Dichloroethane	ug/L	<0.50	20	20	16.0	15.1	80	76	69-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<1.0	40	40	35.8	32.9	90	82	75-125	8	30	N2
1,2-Dichloropropane	ug/L	<4.0	20	20	18.8	19.2	94	96	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	<1.0	20	20	18.2	19.2	91	96	75-125	6	30	
1,3-Dichlorobenzene	ug/L	<0.50	20	20	19.1	20.0	96	100	75-125	4	30	
1,3-Dichloropropane	ug/L	<0.50	20	20	18.3	19.2	91	96	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.50	20	20	18.0	18.7	90	93	74-125	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	<200	400	400	361	377	90	94	67-128	4	30	
2,2,4-Trimethylpentane	ug/L	<4.0	20	20	21.5	18.4	108	92	65-150	16	30	N2
2,2-Dichloropropane	ug/L	<1.0	20	20	20.0	18.1	100	91	65-136	10	30	
2-Butanone (MEK)	ug/L	<5.0	100	100	82.6	70.6	83	71	59-125	16	30	
2-Chlorotoluene	ug/L	<0.50	20	20	19.5	20.4	97	102	73-126	5	30	
2-Hexanone	ug/L	<5.0	100	100	91.9	94.2	92	94	68-138	3	30	
4-Chlorotoluene	ug/L	<0.50	20	20	19.2	19.9	96	100	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	100	100	91.6	94.5	92	94	73-125	3	30	
Acetone	ug/L	<20.0	100	100	68.6	90.4	69	90	75-150	28	30	M1
Acrolein	ug/L	<10.0	200	200	429	395	214	197	53-150	8	30	M1
Acrylonitrile	ug/L	<10.0	200	200	182	164	91	82	69-127	10	30	
Benzene	ug/L	<0.50	20	20	17.7	17.3	88	87	74-125	2	30	
Bromobenzene	ug/L	<0.50	20	20	18.8	19.5	94	98	75-125	4	30	
Bromochloromethane	ug/L	<1.0	20	20	18.1	16.0	91	80	75-125	12	30	
Bromodichloromethane	ug/L	<0.50	20	20	18.1	18.8	90	94	75-125	4	30	
Bromoform	ug/L	<4.0	20	20	16.5	17.8	82	89	68-125	8	30	
Bromomethane	ug/L	<4.0	20	20	26.2	15.7	131	78	37-149	50	30	R1
Carbon disulfide	ug/L	<1.0	20	20	20.5	18.1	102	91	66-139	12	30	
Carbon tetrachloride	ug/L	<0.50	20	20	18.6	17.7	93	88	75-127	5	30	
Chlorobenzene	ug/L	<0.50	20	20	19.4	19.5	97	98	75-125	1	30	
Chloroethane	ug/L	<1.0	20	20	23.6	17.8	118	89	73-134	28	30	
Chloroform	ug/L	<1.0	20	20	15.7	14.5	78	72	71-125	8	30	
Chloromethane	ug/L	<4.0	20	20	21.2	18.7	102	90	58-133	13	30	
cis-1,2-Dichloroethene	ug/L	<0.50	20	20	18.1	16.5	90	83	75-125	9	30	
cis-1,3-Dichloropropene	ug/L	<0.50	20	20	16.6	17.1	83	85	71-125	3	30	
Dibromochloromethane	ug/L	<0.50	20	20	17.0	18.2	85	91	75-125	7	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10439872

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2996323 2996324

Parameter	Units	10440427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<1.0	20	20	17.3	18.2	87	91	75-125	5	30	
Dichlorodifluoromethane	ug/L	<1.0	20	20	24.1	20.3	120	102	70-150	17	30	
Dichlorofluoromethane	ug/L	<1.0	20	20	21.4	17.8	107	89	75-126	19	30	N2
Diisopropyl ether	ug/L	<1.0	20	20	16.7	15.0	83	75	66-131	10	30	
Ethyl-tert-butyl ether	ug/L	<0.50	20	20	17.2	15.9	86	79	74-125	8	30	
Ethylbenzene	ug/L	<0.50	20	20	20.3	20.5	102	102	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<1.0	20	20	22.3	22.0	112	110	60-150	1	30	
Isopropylbenzene (Cumene)	ug/L	<1.0	20	20	18.8	19.0	94	95	75-125	1	30	
m&p-Xylene	ug/L	<1.0	40	40	41.2	41.4	103	104	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.50	20	20	17.3	15.9	87	80	75-125	8	30	
Methylene Chloride	ug/L	<4.0	20	20	15.7	14.2	79	71	72-125	10	30	M1
n-Butylbenzene	ug/L	<1.0	20	20	19.2	20.3	96	101	73-140	5	30	
n-Propylbenzene	ug/L	<0.50	20	20	20.7	21.8	103	109	75-126	5	30	
Naphthalene	ug/L	<1.0	20	20	17.6	17.1	88	85	61-136	3	30	
o-Xylene	ug/L	<0.50	20	20	20.3	20.6	101	103	75-125	2	30	
p-Isopropyltoluene	ug/L	<0.50	20	20	18.9	19.9	95	99	73-133	5	30	
sec-Butylbenzene	ug/L	<0.50	20	20	19.3	20.1	97	100	75-132	4	30	
Styrene	ug/L	<1.0	20	20	18.4	18.7	92	94	71-125	2	30	
tert-Amylmethyl ether	ug/L	<0.50	20	20	18.0	17.5	90	88	71-125	2	30	
tert-Butyl Alcohol	ug/L	<10.0	200	200	180	183	90	92	72-130	2	30	
tert-Butylbenzene	ug/L	<0.50	20	20	19.2	19.9	96	100	75-126	4	30	
Tetrachloroethene	ug/L	<0.50	20	20	19.7	19.8	99	99	75-125	0	30	
Tetrahydrofuran	ug/L	<10.0	200	200	147	204	73	102	75-150	33	30	M1,R1
Toluene	ug/L	<0.50	20	20	18.5	18.8	93	94	74-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.50	20	20	17.7	16.4	89	82	75-125	8	30	
trans-1,3-Dichloropropene	ug/L	<0.50	20	20	17.1	17.9	85	90	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<10.0	50.2	50.2	44.6	49.3	89	98	57-125	10	30	
Trichloroethene	ug/L	1.4	20	20	18.8	19.4	87	90	75-125	3	30	
Trichlorofluoromethane	ug/L	<0.50	20	20	19.6	17.0	98	85	75-135	14	30	
Vinyl acetate	ug/L	<10.0	20	20	20.4	17.9	102	90	57-136	13	30	
Vinyl chloride	ug/L	<0.20	20	20	22.5	18.8	112	94	74-141	18	30	
Xylene (Total)	ug/L	<1.5	60	60	61.5	62.0	102	103	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						89	82	75-125			
4-Bromofluorobenzene (S)	%.						101	102	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

QC Batch: 553557 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10439872001

METHOD BLANK: 3007495 | Matrix: Water
Associated Lab Samples: 10439872001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	07/30/18 21:37	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	07/30/18 21:37	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	07/30/18 21:37	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	07/30/18 21:37	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	07/30/18 21:37	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	07/30/18 21:37	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	07/30/18 21:37	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	07/30/18 21:37	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	07/30/18 21:37	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	07/30/18 21:37	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	07/30/18 21:37	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	07/30/18 21:37	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	07/30/18 21:37	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	07/30/18 21:37	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	07/30/18 21:37	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	07/30/18 21:37	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	07/30/18 21:37	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	07/30/18 21:37	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	07/30/18 21:37	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	07/30/18 21:37	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	07/30/18 21:37	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	07/30/18 21:37	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	07/30/18 21:37	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	07/30/18 21:37	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	07/30/18 21:37	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	07/30/18 21:37	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	07/30/18 21:37	
2-Hexanone	ug/L	<0.88	5.0	0.88	07/30/18 21:37	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	07/30/18 21:37	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	07/30/18 21:37	
Acetone	ug/L	<9.2	20.0	9.2	07/30/18 21:37	
Acrolein	ug/L	<1.2	10.0	1.2	07/30/18 21:37	
Acrylonitrile	ug/L	<0.91	10.0	0.91	07/30/18 21:37	
Benzene	ug/L	<0.10	0.50	0.10	07/30/18 21:37	
Bromobenzene	ug/L	<0.21	0.50	0.21	07/30/18 21:37	
Bromochloromethane	ug/L	<0.27	1.0	0.27	07/30/18 21:37	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	07/30/18 21:37	
Bromoform	ug/L	<0.80	4.0	0.80	07/30/18 21:37	
Bromomethane	ug/L	<1.8	4.0	1.8	07/30/18 21:37	
Carbon disulfide	ug/L	<0.078	1.0	0.078	07/30/18 21:37	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	07/30/18 21:37	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

METHOD BLANK: 3007495 Matrix: Water
Associated Lab Samples: 10439872001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	07/30/18 21:37	
Chloroethane	ug/L	<0.49	1.0	0.49	07/30/18 21:37	
Chloroform	ug/L	<0.45	1.0	0.45	07/30/18 21:37	
Chloromethane	ug/L	<0.16	4.0	0.16	07/30/18 21:37	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	07/30/18 21:37	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	07/30/18 21:37	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	07/30/18 21:37	
Dibromomethane	ug/L	<0.16	1.0	0.16	07/30/18 21:37	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	07/30/18 21:37	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	07/30/18 21:37	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	07/30/18 21:37	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	07/30/18 21:37	
Ethylbenzene	ug/L	<0.14	0.50	0.14	07/30/18 21:37	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	07/30/18 21:37	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	07/30/18 21:37	
m&p-Xylene	ug/L	<0.31	1.0	0.31	07/30/18 21:37	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	07/30/18 21:37	
Methylene Chloride	ug/L	<0.98	4.0	0.98	07/30/18 21:37	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	07/30/18 21:37	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	07/30/18 21:37	
Naphthalene	ug/L	<0.48	1.0	0.48	07/30/18 21:37	
o-Xylene	ug/L	<0.16	0.50	0.16	07/30/18 21:37	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	07/30/18 21:37	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	07/30/18 21:37	
Styrene	ug/L	<0.19	1.0	0.19	07/30/18 21:37	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	07/30/18 21:37	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	07/30/18 21:37	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	07/30/18 21:37	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	07/30/18 21:37	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	07/30/18 21:37	
Toluene	ug/L	<0.083	0.50	0.083	07/30/18 21:37	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	07/30/18 21:37	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	07/30/18 21:37	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	07/30/18 21:37	
Trichloroethene	ug/L	<0.15	0.40	0.15	07/30/18 21:37	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	07/30/18 21:37	
Vinyl acetate	ug/L	<1.1	10.0	1.1	07/30/18 21:37	
Vinyl chloride	ug/L	<0.092	0.20	0.092	07/30/18 21:37	
Xylene (Total)	ug/L	<0.31	1.5	0.31	07/30/18 21:37	
1,2-Dichloroethane-d4 (S)	%.	102	75-125		07/30/18 21:37	
4-Bromofluorobenzene (S)	%.	101	75-125		07/30/18 21:37	
Toluene-d8 (S)	%.	100	75-125		07/30/18 21:37	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

LABORATORY CONTROL SAMPLE: 3007496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.5	98	75-125	
1,1,1-Trichloroethane	ug/L	20	19.9	100	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	98	75-125	
1,1,2-Trichloroethane	ug/L	20	20.6	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.1	101	72-125	
1,1-Dichloroethane	ug/L	20	19.8	99	75-125	
1,1-Dichloroethene	ug/L	20	19.9	100	73-125	
1,1-Dichloropropene	ug/L	20	21.2	106	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-130	
1,2,3-Trichloropropane	ug/L	20	20.4	102	75-125	
1,2,4-Trichlorobenzene	ug/L	20	21.4	107	75-125	
1,2,4-Trimethylbenzene	ug/L	20	23.7	119	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	49.2	98	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.8	104	75-125	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-125	
1,2-Dichloroethane	ug/L	20	19.0	95	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.4	101	75-125	N2
1,2-Dichloropropane	ug/L	20	20.6	103	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.7	108	75-125	
1,3-Dichlorobenzene	ug/L	20	20.5	103	75-125	
1,3-Dichloropropane	ug/L	20	20.7	103	75-125	
1,4-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	411	103	75-125	
2,2,4-Trimethylpentane	ug/L	20	22.2	111	64-130	N2
2,2-Dichloropropane	ug/L	20	18.2	91	68-129	
2-Butanone (MEK)	ug/L	100	95.4	95	65-126	
2-Chlorotoluene	ug/L	20	20.8	104	75-125	
2-Hexanone	ug/L	100	111	111	75-134	
4-Chlorotoluene	ug/L	20	21.9	110	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	75-131	
Acetone	ug/L	100	108	108	68-150	
Acrolein	ug/L	200	193	96	63-149	
Acrylonitrile	ug/L	200	201	100	75-125	
Benzene	ug/L	20	20.1	101	75-125	
Bromobenzene	ug/L	20	19.5	98	75-125	
Bromochloromethane	ug/L	20	19.9	99	75-125	
Bromodichloromethane	ug/L	20	19.4	97	75-125	
Bromoform	ug/L	20	19.9	99	70-125	
Bromomethane	ug/L	20	16.3	81	30-145	
Carbon disulfide	ug/L	20	25.4	127	67-125	L3
Carbon tetrachloride	ug/L	20	20.7	104	75-125	
Chlorobenzene	ug/L	20	19.0	95	75-125	
Chloroethane	ug/L	20	20.9	105	73-131	
Chloroform	ug/L	20	20.4	102	75-125	
Chloromethane	ug/L	20	19.4	97	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.9	105	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

LABORATORY CONTROL SAMPLE: 3007496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	22.1	110	75-125	
Dichlorodifluoromethane	ug/L	20	19.0	95	64-127	
Dichlorofluoromethane	ug/L	20	19.7	99	75-125	N2
Diisopropyl ether	ug/L	20	19.2	96	75-125	
Ethyl-tert-butyl ether	ug/L	20	19.7	99	75-125	
Ethylbenzene	ug/L	20	20.9	105	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.8	99	75-130	
Isopropylbenzene (Cumene)	ug/L	20	22.1	110	75-125	
m&p-Xylene	ug/L	40	44.2	111	75-125	
Methyl-tert-butyl ether	ug/L	20	19.3	96	75-125	
Methylene Chloride	ug/L	20	20.9	105	72-125	
n-Butylbenzene	ug/L	20	22.7	113	75-125	
n-Propylbenzene	ug/L	20	20.7	104	75-125	
Naphthalene	ug/L	20	19.4	97	61-136	
o-Xylene	ug/L	20	21.7	108	75-125	
p-Isopropyltoluene	ug/L	20	21.2	106	75-125	
sec-Butylbenzene	ug/L	20	21.8	109	75-125	
Styrene	ug/L	20	21.6	108	75-125	
tert-Amylmethyl ether	ug/L	20	19.7	99	75-125	
tert-Butyl Alcohol	ug/L	200	213	107	75-125	
tert-Butylbenzene	ug/L	20	20.9	104	75-125	
Tetrachloroethene	ug/L	20	19.9	100	75-125	
Tetrahydrofuran	ug/L	200	209	104	64-150	
Toluene	ug/L	20	19.2	96	75-125	
trans-1,2-Dichloroethene	ug/L	20	19.1	95	75-125	
trans-1,3-Dichloropropene	ug/L	20	21.0	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	50.0	100	57-126	
Trichloroethene	ug/L	20	21.4	107	75-125	
Trichlorofluoromethane	ug/L	20	17.8	89	74-126	
Vinyl acetate	ug/L	20	19.5	97	72-129	
Vinyl chloride	ug/L	20	18.4	92	71-130	
Xylene (Total)	ug/L	60	65.9	110	75-125	
1,2-Dichloroethane-d4 (S)	%.			98	75-125	
4-Bromofluorobenzene (S)	%.			104	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007951 3007952

Parameter	Units	10440437001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	1000	1000	1070	1030	107	103	75-125	4	30	
1,1,1-Trichloroethane	ug/L	ND	1000	1000	1120	1100	112	110	75-129	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	1000	1000	1040	1050	104	105	75-125	1	30	
1,1,2-Trichloroethane	ug/L	ND	1000	1000	1080	1090	108	109	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical
www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007951 3007952

Parameter	Units	10440437001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1000	1000	1120	1080	112	108	75-136	4	30	
1,1-Dichloroethane	ug/L	ND	1000	1000	1090	1050	109	105	75-125	3	30	
1,1-Dichloroethene	ug/L	ND	1000	1000	1100	1100	110	110	75-127	1	30	
1,1-Dichloropropene	ug/L	ND	1000	1000	1160	1150	116	115	75-129	1	30	
1,2,3-Trichlorobenzene	ug/L	ND	1000	1000	1110	1140	111	114	72-137	3	30	
1,2,3-Trichloropropane	ug/L	ND	1000	1000	1090	1080	109	108	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	1000	1000	1170	1180	117	118	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	ND	1000	1000	1250	1240	125	124	71-125	1	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2500	2500	2690	2680	108	107	61-127	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	1000	1000	1080	1070	108	107	75-125	1	30	
1,2-Dichlorobenzene	ug/L	ND	1000	1000	1050	1030	105	103	75-125	2	30	
1,2-Dichloroethane	ug/L	ND	1000	1000	1010	990	101	99	69-125	2	30	
1,2-Dichloroethene (Total)	ug/L	ND	2000	2000	2200	2140	110	107	75-125	3	30	N2
1,2-Dichloropropane	ug/L	ND	1000	1000	1120	1090	112	109	75-125	3	30	
1,3,5-Trimethylbenzene	ug/L	ND	1000	1000	1150	1130	115	113	75-125	1	30	
1,3-Dichlorobenzene	ug/L	ND	1000	1000	1100	1070	110	107	75-125	2	30	
1,3-Dichloropropane	ug/L	ND	1000	1000	1090	1070	109	107	75-125	2	30	
1,4-Dichlorobenzene	ug/L	ND	1000	1000	1050	1020	105	102	74-125	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	20000	20000	20700	19800	103	99	67-128	5	30	
2,2,4-Trimethylpentane	ug/L	ND	1000	1000	1520	1550	152	155	65-150	1	30	M1,N2
2,2-Dichloropropane	ug/L	ND	1000	1000	1050	1030	105	103	65-136	2	30	
2-Butanone (MEK)	ug/L	ND	5000	5000	5270	5400	105	108	59-125	2	30	
2-Chlorotoluene	ug/L	ND	1000	1000	1130	1100	113	110	73-126	2	30	
2-Hexanone	ug/L	ND	5000	5000	6280	6210	126	124	68-138	1	30	
4-Chlorotoluene	ug/L	ND	1000	1000	1150	1140	115	114	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5000	5000	5820	5800	116	116	73-125	0	30	
Acetone	ug/L	ND	5000	5000	6310	6040	115	109	75-150	4	30	
Acrolein	ug/L	ND	10000	10000	19500	19400	195	194	53-150	1	30	M1
Acrylonitrile	ug/L	ND	10000	10000	10600	10900	106	109	69-127	2	30	
Benzene	ug/L	ND	1000	1000	1100	1080	110	108	74-125	2	30	
Bromobenzene	ug/L	ND	1000	1000	1030	1010	103	101	75-125	2	30	
Bromochloromethane	ug/L	ND	1000	1000	1040	1030	104	103	75-125	1	30	
Bromodichloromethane	ug/L	ND	1000	1000	1050	1030	105	103	75-125	2	30	
Bromoform	ug/L	ND	1000	1000	1080	1050	108	105	68-125	3	30	
Bromomethane	ug/L	ND	1000	1000	942	951	94	95	37-149	1	30	
Carbon disulfide	ug/L	ND	1000	1000	1410	1400	141	140	66-139	0	30	M0
Carbon tetrachloride	ug/L	ND	1000	1000	1150	1110	115	111	75-127	3	30	
Chlorobenzene	ug/L	ND	1000	1000	1040	1010	104	101	75-125	3	30	
Chloroethane	ug/L	ND	1000	1000	1130	1130	113	113	73-134	0	30	
Chloroform	ug/L	ND	1000	1000	1100	1080	109	107	71-125	1	30	
Chloromethane	ug/L	ND	1000	1000	1040	1030	104	103	58-133	1	30	
cis-1,2-Dichloroethene	ug/L	ND	1000	1000	1160	1100	116	110	75-125	5	30	
cis-1,3-Dichloropropene	ug/L	ND	1000	1000	1110	1080	111	108	71-125	3	30	
Dibromochloromethane	ug/L	ND	1000	1000	1040	1020	104	102	75-125	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007951 3007952

Parameter	Units	10440437001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	1000	1000	1160	1120	116	112	75-125	4	30	
Dichlorodifluoromethane	ug/L	ND	1000	1000	1100	1070	110	107	70-150	3	30	
Dichlorofluoromethane	ug/L	ND	1000	1000	1090	1070	109	107	75-126	2	30	N2
Diisopropyl ether	ug/L	ND	1000	1000	1030	1020	103	102	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	ND	1000	1000	1050	1040	105	104	74-125	1	30	
Ethylbenzene	ug/L	ND	1000	1000	1140	1100	114	110	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	1000	1000	1420	1400	142	140	60-150	1	30	
Isopropylbenzene (Cumene)	ug/L	ND	1000	1000	1200	1170	120	117	75-125	3	30	
m&p-Xylene	ug/L	ND	2000	2000	2400	2320	120	116	75-125	3	30	
Methyl-tert-butyl ether	ug/L	ND	1000	1000	1030	1010	103	101	75-125	2	30	
Methylene Chloride	ug/L	ND	1000	1000	1100	1080	106	105	72-125	2	30	
n-Butylbenzene	ug/L	ND	1000	1000	1260	1240	126	124	73-140	2	30	
n-Propylbenzene	ug/L	ND	1000	1000	1110	1090	111	109	75-126	2	30	
Naphthalene	ug/L	ND	1000	1000	1100	1090	110	109	61-136	1	30	
o-Xylene	ug/L	ND	1000	1000	1190	1150	119	115	75-125	3	30	
p-Isopropyltoluene	ug/L	ND	1000	1000	1120	1130	112	113	73-133	1	30	
sec-Butylbenzene	ug/L	ND	1000	1000	1190	1170	119	117	75-132	1	30	
Styrene	ug/L	ND	1000	1000	1170	1140	117	114	71-125	3	30	
tert-Amylmethyl ether	ug/L	ND	1000	1000	1050	1030	105	103	71-125	1	30	
tert-Butyl Alcohol	ug/L	ND	10000	10000	11000	11100	110	111	72-130	1	30	
tert-Butylbenzene	ug/L	ND	1000	1000	1130	1140	113	114	75-126	1	30	
Tetrachloroethene	ug/L	ND	1000	1000	1090	1070	109	107	75-125	2	30	
Tetrahydrofuran	ug/L	ND	10000	10000	10300	9950	103	99	75-150	3	30	
Toluene	ug/L	ND	1000	1000	1060	1030	106	103	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	ND	1000	1000	1040	1040	104	104	75-125	0	30	
trans-1,3-Dichloropropene	ug/L	ND	1000	1000	1120	1110	112	111	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	2510	2510	2770	2730	110	109	57-125	2	30	
Trichloroethene	ug/L	ND	1000	1000	1180	1160	118	116	75-125	1	30	
Trichlorofluoromethane	ug/L	ND	1000	1000	1040	1040	104	104	75-135	1	30	
Vinyl acetate	ug/L	ND	1000	1000	1050	1050	105	105	57-136	0	30	
Vinyl chloride	ug/L	ND	1000	1000	1060	1040	106	104	74-141	2	30	
Xylene (Total)	ug/L	ND	3000	3000	3580	3470	119	116	75-125	3	30	
1,2-Dichloroethane-d4 (S)	%.						99	98	75-125			F1,HS
4-Bromofluorobenzene (S)	%.						103	104	75-125			
Toluene-d8 (S)	%.						100	100	75-125			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
F1	The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10439872

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10439872001	**WS5-GW-071718**	EPA 8260B	553557		
10439872002	**TB-071718**	EPA 8260B	551437		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reque

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fiel

WO#: 10439872

10439872

Section A
Required Client Information:

Company: CH2M Hill	
Address: 999 W. Riverside Ave, Suite 500	
Spokane, WA 99201	
Email:	
Phone:	Fax:
Requested Due Date: ***10 Day Standard***	

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	Residual Chlorine (Y/N)	
1	WS5-GW-071718	WT	G			7-17-18	1200		3				X				X												001
2	TB-071718	WT	G			7-17-18	/		2				X				X												Trip Blank
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	LKB / CH2M	7-17-18	1405	[signature] Pace	7/18/18	930	6.0	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L. Baumann

SIGNATURE of SAMPLER: LKB [signature] DATE Signed: 7-17-18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #:

WO# : 10439872

PM: JMG Due Date: 07/25/18

CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 4486 7785 7975

Custody Seal on Cooler/Box Present? ☒Yes ☐No Seals Intact? ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other: Temp Blank? ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842 Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 6.0 Cooler Temp Corrected (°C): 6.0 Biological Tissue Frozen? ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C Correction Factor: Tam Date and Initials of Person Examining Contents: H 7/18/18

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8. No ms/msd provided
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒Yes	☐No	☐N/A	14. 1/2 TB'S have more than 6mm headspace
3 Trip Blanks Present?	☒Yes	☐No	☐N/A	15. only 2 TB'S, Sharing TBs with W.O.# 10439854
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 167002				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐Yes ☐No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane. Notified client of headspace.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1050	Temp: 6.0	Corrected Temp: 6.0
Time: 1110	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 07/18/18

Note: Whenever there is a discrepancy affecting North Carolina compliance ... form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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July 31, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on July 18, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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CERTIFICATIONS

Project:	1497 Freeman,WA-Grain Handling
Pace Project No.:	10439873

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
California Certification #2973
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10439873001	**WS5-GW-071718**	Water	07/17/18 12:00	07/18/18 09:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10439873001	**WS5-GW-071718**	RSK 175	MJL	3	PASI-M
		EPA 6010D	BD1	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10439873001	**WS5-GW-071718**					
EPA 6010D	Barium, Dissolved	51.6	ug/L	10.0	07/23/18 12:54	
EPA 6010D	Cadmium, Dissolved	0.46J	ug/L	3.0	07/23/18 12:54	
EPA 6010D	Calcium, Dissolved	32200	ug/L	500	07/23/18 12:54	
EPA 6010D	Cobalt, Dissolved	0.74J	ug/L	10.0	07/23/18 12:54	
EPA 6010D	Copper, Dissolved	4.7J	ug/L	10.0	07/23/18 12:54	
EPA 6010D	Iron, Dissolved	4.8J	ug/L	50.0	07/23/18 12:54	
EPA 6010D	Magnesium, Dissolved	14400	ug/L	500	07/23/18 12:54	
EPA 6010D	Manganese, Dissolved	0.26J	ug/L	5.0	07/23/18 12:54	
EPA 6010D	Nickel, Dissolved	3.6J	ug/L	20.0	07/23/18 12:54	
EPA 6010D	Potassium, Dissolved	4860	ug/L	2500	07/23/18 12:54	
EPA 6010D	Sodium, Dissolved	14000	ug/L	1000	07/23/18 12:54	
EPA 6010D	Vanadium, Dissolved	19.0	ug/L	15.0	07/23/18 12:54	
EPA 6010D	Zinc, Dissolved	20.4	ug/L	20.0	07/23/18 12:54	
SM 2320B	Alkalinity, Total as CaCO3	163	mg/L	5.0	07/31/18 09:00	
SM 2540C	Total Dissolved Solids	227	mg/L	10.0	07/20/18 10:28	
EPA 300.0	Chloride	2.7	mg/L	1.2	07/19/18 09:57	
EPA 300.0	Nitrate as N	1.1	mg/L	0.10	07/19/18 09:57	
EPA 300.0	Sulfate	5.9	mg/L	1.2	07/19/18 09:57	
EPA 353.2	Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	07/24/18 12:28	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	07/24/18 01:23	

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 551659

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10440118002

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MSD (Lab ID: 2997796)
  - Calcium, Dissolved
  - Magnesium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 553638

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10439998005,10439999003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3007850)
  - Alkalinity, Total as $CaCO_3$
- MSD (Lab ID: 3007851)
  - Alkalinity, Total as $CaCO_3$

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 115845

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2080854001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 499309)
    - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 551304

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.
- BLANK (Lab ID: 2995909)
  - Sulfate

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 551304

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10439906001,10439998005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2995911)
  - Sulfate
- MS (Lab ID: 2995913)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2995912)
  - Sulfate
- MSD (Lab ID: 2995914)
  - Chloride
  - Sulfate

Additional Comments:

Analyte Comments:

QC Batch: 551304

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.
- BLANK (Lab ID: 2995909)
  - Sulfate

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman,WA-Grain Handling
Pace Project No.:	10439873

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: July 31, 2018

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Sample: WS5-GW-071718 **Lab ID: 10439873001** Collected: 07/17/18 12:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		07/23/18 14:09	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		07/23/18 14:09	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		07/23/18 14:09	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	07/20/18 13:12	07/23/18 12:54	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	07/20/18 13:12	07/23/18 12:54	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	07/20/18 13:12	07/23/18 12:54	7440-38-2	
Barium, Dissolved	**51.6**	ug/L	10.0	0.18	1	07/20/18 13:12	07/23/18 12:54	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	07/20/18 13:12	07/23/18 12:54	7440-41-7	
Cadmium, Dissolved	**0.46J**	ug/L	3.0	0.26	1	07/20/18 13:12	07/23/18 12:54	7440-43-9	
Calcium, Dissolved	**32200**	ug/L	500	13.9	1	07/20/18 13:12	07/23/18 12:54	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	07/20/18 13:12	07/23/18 12:54	7440-47-3	
Cobalt, Dissolved	**0.74J**	ug/L	10.0	0.50	1	07/20/18 13:12	07/23/18 12:54	7440-48-4	
Copper, Dissolved	**4.7J**	ug/L	10.0	1.2	1	07/20/18 13:12	07/23/18 12:54	7440-50-8	
Iron, Dissolved	**4.8J**	ug/L	50.0	4.3	1	07/20/18 13:12	07/23/18 12:54	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	07/20/18 13:12	07/23/18 12:54	7439-92-1	
Magnesium, Dissolved	**14400**	ug/L	500	9.8	1	07/20/18 13:12	07/23/18 12:54	7439-95-4	
Manganese, Dissolved	**0.26J**	ug/L	5.0	0.22	1	07/20/18 13:12	07/23/18 12:54	7439-96-5	
Nickel, Dissolved	**3.6J**	ug/L	20.0	1.1	1	07/20/18 13:12	07/23/18 12:54	7440-02-0	
Potassium, Dissolved	**4860**	ug/L	2500	310	1	07/20/18 13:12	07/23/18 12:54	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	07/20/18 13:12	07/23/18 12:54	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	07/20/18 13:12	07/23/18 12:54	7440-22-4	
Sodium, Dissolved	**14000**	ug/L	1000	21.5	1	07/20/18 13:12	07/23/18 12:54	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	07/20/18 13:12	07/23/18 12:54	7440-28-0	
Vanadium, Dissolved	**19.0**	ug/L	15.0	0.29	1	07/20/18 13:12	07/23/18 12:54	7440-62-2	
Zinc, Dissolved	**20.4**	ug/L	20.0	2.5	1	07/20/18 13:12	07/23/18 12:54	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	07/20/18 17:21	07/23/18 15:26	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**163**	mg/L	5.0	1.0	1		07/31/18 09:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**227**	mg/L	10.0	5.0	1		07/20/18 10:28		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		07/24/18 10:07	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.7**	mg/L	1.2	0.28	1		07/19/18 09:57	16887-00-6	
Nitrate as N	**1.1**	mg/L	0.10	0.015	1		07/19/18 09:57	14797-55-8	
Sulfate	**5.9**	mg/L	1.2	0.19	1		07/19/18 09:57	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling

Pace Project No.: 10439873

Sample: WS5-GW-071718 **Lab ID: 10439873001** Collected: 07/17/18 12:00 Received: 07/18/18 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.1**	mg/L	0.10	0.011	1		07/24/18 12:28		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	07/19/18 11:33	07/19/18 16:09		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.4**	mg/L	1.0	0.20	1		07/24/18 01:23	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 552017 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10439873001

METHOD BLANK: 2999728 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	07/23/18 13:13	
Ethene	ug/L	<2.9	10.0	2.9	07/23/18 13:13	
Methane	ug/L	<4.9	10.0	4.9	07/23/18 13:13	

LABORATORY CONTROL SAMPLE & LCSD: 2999729 2999730

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	96.6	110	85	97	85-115	13	20	
Ethene	ug/L	106	90.4	105	85	99	85-115	15	20	
Methane	ug/L	60.7	53.3	60.3	88	99	85-115	12	20	

SAMPLE DUPLICATE: 2999731

Parameter	Units	10439999001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	13.0	15.3	16	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 551354 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10439873001

METHOD BLANK: 2996061 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	07/23/18 15:17	

LABORATORY CONTROL SAMPLE: 2996062

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2996063 2996064

Parameter	Units	10439934002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.8	5.8	115	117	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 551659 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10439873001

METHOD BLANK: 2997793 Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	07/23/18 12:33	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	07/23/18 12:33	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	07/23/18 12:33	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	07/23/18 12:33	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	07/23/18 12:33	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	07/23/18 12:33	
Calcium, Dissolved	ug/L	<13.9	500	13.9	07/23/18 12:33	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	07/23/18 12:33	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	07/23/18 12:33	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	07/23/18 12:33	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	07/23/18 12:33	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	07/23/18 12:33	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	07/23/18 12:33	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	07/23/18 12:33	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	07/23/18 12:33	
Potassium, Dissolved	ug/L	<310	2500	310	07/23/18 12:33	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	07/23/18 12:33	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	07/23/18 12:33	
Sodium, Dissolved	ug/L	22.2J	1000	21.5	07/23/18 12:33	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	07/23/18 12:33	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	07/23/18 12:33	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	07/23/18 12:33	

LABORATORY CONTROL SAMPLE: 2997794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20000	100	80-120	
Antimony, Dissolved	ug/L	1000	922	92	80-120	
Arsenic, Dissolved	ug/L	1000	915	92	80-120	
Barium, Dissolved	ug/L	1000	964	96	80-120	
Beryllium, Dissolved	ug/L	1000	965	97	80-120	
Cadmium, Dissolved	ug/L	1000	943	94	80-120	
Calcium, Dissolved	ug/L	20000	18200	91	80-120	
Chromium, Dissolved	ug/L	1000	931	93	80-120	
Cobalt, Dissolved	ug/L	1000	929	93	80-120	
Copper, Dissolved	ug/L	1000	904	90	80-120	
Iron, Dissolved	ug/L	20000	18500	92	80-120	
Lead, Dissolved	ug/L	1000	940	94	80-120	
Magnesium, Dissolved	ug/L	20000	18600	93	80-120	
Manganese, Dissolved	ug/L	1000	948	95	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

LABORATORY CONTROL SAMPLE: 2997794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	940	94	80-120	
Potassium, Dissolved	ug/L	20000	18100	91	80-120	
Selenium, Dissolved	ug/L	1000	975	97	80-120	
Silver, Dissolved	ug/L	500	473	95	80-120	
Sodium, Dissolved	ug/L	20000	18200	91	80-120	
Thallium, Dissolved	ug/L	1000	931	93	80-120	
Vanadium, Dissolved	ug/L	1000	914	91	80-120	
Zinc, Dissolved	ug/L	1000	944	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2997795 2997796

Parameter	Units	10440118002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<200	20000	20000	20800	21600	104	108	75-125	4	20	
Antimony, Dissolved	ug/L	<20.0	1000	1000	957	984	95	98	75-125	3	20	
Arsenic, Dissolved	ug/L	<20.0	1000	1000	960	995	96	99	75-125	4	20	
Barium, Dissolved	ug/L	123	1000	1000	1080	1100	96	98	75-125	2	20	
Beryllium, Dissolved	ug/L	<5.0	1000	1000	982	1020	98	102	75-125	4	20	
Cadmium, Dissolved	ug/L	<3.0	1000	1000	961	995	96	99	75-125	3	20	
Calcium, Dissolved	ug/L	349000	20000	20000	370000	379000	105	154	75-125	3	20	P6
Chromium, Dissolved	ug/L	<10.0	1000	1000	926	964	93	96	75-125	4	20	
Cobalt, Dissolved	ug/L	<10.0	1000	1000	896	933	89	93	75-125	4	20	
Copper, Dissolved	ug/L	<10.0	1000	1000	933	972	93	97	75-125	4	20	
Iron, Dissolved	ug/L	<50.0	20000	20000	18300	18900	91	95	75-125	3	20	
Lead, Dissolved	ug/L	<10.0	1000	1000	908	938	90	93	75-125	3	20	
Magnesium, Dissolved	ug/L	186000	20000	20000	207000	212000	103	130	75-125	3	20	P6
Manganese, Dissolved	ug/L	103	1000	1000	1040	1080	94	97	75-125	3	20	
Nickel, Dissolved	ug/L	<20.0	1000	1000	911	945	90	93	75-125	4	20	
Potassium, Dissolved	ug/L	52900	20000	20000	73100	72800	101	100	75-125	0	20	
Selenium, Dissolved	ug/L	<20.0	1000	1000	1010	1050	101	105	75-125	4	20	
Silver, Dissolved	ug/L	<10.0	500	500	502	517	100	103	75-125	3	20	
Sodium, Dissolved	ug/L	36600	20000	20000	54100	54700	88	91	75-125	1	20	
Thallium, Dissolved	ug/L	<20.0	1000	1000	886	919	88	92	75-125	4	20	
Vanadium, Dissolved	ug/L	<15.0	1000	1000	930	966	93	97	75-125	4	20	
Zinc, Dissolved	ug/L	<20.0	1000	1000	897	931	89	93	75-125	4	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 553638 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10439873001

METHOD BLANK: 3007845 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	07/31/18 08:25	

LABORATORY CONTROL SAMPLE & LCSD: 3007846 | 3007847

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.9	41.6	100	104	90-110	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007848 | 3007849

Parameter	Units	10439999003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	350	40	40	384	382	86	81	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007850 | 3007851

Parameter	Units	10439998005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	717	40	40	741	744	62	70	80-120	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 551591 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10439873001

METHOD BLANK: 2997405 Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	07/20/18 10:28	

LABORATORY CONTROL SAMPLE & LCSD: 2997406 2997407

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	962	964	96	96	80-120	0	10	

SAMPLE DUPLICATE: 2997408

Parameter	Units	10439970001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	292	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 115845 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10439873001

METHOD BLANK: 499306 Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	07/24/18 10:04	

LABORATORY CONTROL SAMPLE: 499307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 499309

Parameter	Units	2080854001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.058	29	75-125	M1

SAMPLE DUPLICATE: 499308

Parameter	Units	2080854001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 551304 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10439873001

METHOD BLANK: 2995909 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	07/19/18 13:32	
Nitrate as N	mg/L	<0.015	0.10	0.015	07/19/18 13:32	
Sulfate	mg/L	0.54J	1.2	0.19	07/19/18 13:32	P8

LABORATORY CONTROL SAMPLE: 2995910

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.9	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2995911 2995912

Parameter	Units	10439906001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<0.28	12.5	12.5	12.0	12.0	96	96	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.96	0.96	96	96	90-110	0	20	
Sulfate	mg/L	0.57J	12.5	12.5	11.7	11.7	89	89	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2995913 2995914

Parameter	Units	10439998005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.6	12.5	12.5	22.8	22.8	81	81	90-110	0	20	M1
Nitrate as N	mg/L	ND	1	1	0.96	0.96	96	96	90-110	0	20	
Sulfate	mg/L	15.1	12.5	12.5	25.4	25.4	83	82	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 552204 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10439873001

METHOD BLANK: 3000809 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	07/24/18 12:38	

LABORATORY CONTROL SAMPLE: 3000810

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3000811 3000812

Parameter	Units	10439925004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.92	0.96	92	96	90-110	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 551371 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10439873001

METHOD BLANK: 2996133 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/19/18 16:06	

LABORATORY CONTROL SAMPLE: 2996134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	314	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2996135 2996136

Parameter	Units	50200549003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	11500	25000	25000	37100	35500	102	96	90-110	4	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

QC Batch: 148159 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10439873001

METHOD BLANK: 585853 | Matrix: Water
Associated Lab Samples: 10439873001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	07/24/18 00:33	

LABORATORY CONTROL SAMPLE: 585854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 585879 585880

Parameter	Units	10439999003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	2.1	25	25	27.6	27.4	102	101	80-120	1	20	

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QUALIFIERS

Project:	1497 Freeman,WA-Grain Handling
Pace Project No.:	10439873

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
P8	Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10439873

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10439873001	**WS5-GW-071718**	RSK 175	552017		
10439873001	**WS5-GW-071718**	EPA 3010	551659	EPA 6010D	551887
10439873001	**WS5-GW-071718**	EPA 7470A	551354	EPA 7470A	551808
10439873001	**WS5-GW-071718**	SM 2320B	553638		
10439873001	**WS5-GW-071718**	SM 2540C	551591		
10439873001	**WS5-GW-071718**	SM 4500-S-2 D	115845		
10439873001	**WS5-GW-071718**	EPA 300.0	551304		
10439873001	**WS5-GW-071718**	EPA 353.2	552204		
10439873001	**WS5-GW-071718**	EPA 410.4	551371	EPA 410.4	551520
10439873001	**WS5-GW-071718**	SM 5310C	148159		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reques

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO#:10439873

10439873

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	WS5-GW-071718	WT	G			7-17-18	1200		9	X	X	X		X				X	X	X	X	X	X	X	X	X			24 hour Hold 001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	LB / CH2M	7-17-18	1409	[signature] Pace	7/18/18	930	6.0	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: L. Baumann

SIGNATURE of SAMPLER: [signature] DATE Signed: 7-17-18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #: **WO# : 10439873**
PM: JMG Due Date: 08/01/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7785 7975

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 6.0 **Cooler Temp Corrected (°C):** 6.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** Turn **Date and Initials of Person Examining Contents:** H 7/18/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No ms/msd provided
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests? H 7/18/18	~~Yes~~	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation?	☑ Yes	☐ No	☐ N/A	Sample # 1-4 1 1
(HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS Per method, VOA pH is checked after analysis H 7/18/18	~~Yes~~	☐ No	☑ N/A	CPT 7/18/18 Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK175, Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1050	Temp: 6.0	Corrected Temp: 6.0
Time: 1110	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 07/18/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 12112485

12112485

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10439873 Workorder Name: 1497 Freeman,WA-Grain Handling Owner Received Date: 7/18/2018 Results Requested By: 8/1/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Preserved Containers: H2SO4				Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	WS5-GW-071718	PS	7/17/2018 12:00	10439873001	Water		2				X	
2												
3												
4												
5												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle / Pace	7/19/18 1845	RW Ch 7.19.18	1945
2	RW Ch 7.20.18	0130	B. Mathers	7/20/18 0800
3				

Comments

Cooler Temperature on Receipt 5.8 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 12112485
PM: HRZ Due Date: 08/01/18
CLIENT: PACE MPLS

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☐ Yes ☑ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 5.5 Cooler Temp Corrected °C: 5.8 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 7.20.18 DC

Comments: BM 7/20/18

Question	Yes	No	N/A	Comments
Chain of Custody Present?	☑	☐	☐	1.
Chain of Custody Filled Out?	☑	☐	☐	2.
Chain of Custody Relinquished?	☑	☐	☐	3.
Sampler Name and Signature on COC?	☐	☑	☐	4.
Samples Arrived within Hold Time?	☑	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐	☑	☐	6.
Rush Turn Around Time Requested?	☐	☑	☐	7.
Sufficient Volume?	☑	☐	☐	8.
Correct Containers Used?	☑	☐	☐	9.
-Pace Containers Used?	☑	☐	☐	
Containers Intact?	☑	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☑	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑	☐	☐	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☑	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☑	14.
Trip Blank Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jren **Date:** 7/20/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2080692

2080692

Chain of Custody

Samples were sent directly to the Subcontracting Lab

WA

Pace Analytical® www.pacelabs.com

Workorder: 10439873 Workorder Name: 1497 Freeman,WA-Grain Handling Owner Received Date: 7/18/2018 Results Requested By: 8/1/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Requested Analysis: 5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	WS5-GW-071718	PS	7/17/2018 12:00	10439873001	Water	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Kyle / Pace	7/19/18 1620			
2	Fed Ex	7-20-18 0920	J miller / Pace	7-20-18	0920
3					

Cooler Temperature on Receipt 1.0 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

Sample Condition Upon Re **WO# : 2080692**

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Proje

PM: CMM **Due Date: 08/01/18**
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: (Wet) Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7-26-18

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☑Yes	☐No	☐N/A	1
Chain of Custody Present:	☑Yes	☐No	☐N/A	2
Chain of Custody Complete:	☑Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	5
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	6
Sufficient Volume:	☑Yes	☐No	☐N/A	7
Correct Containers Used:	☑Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☑No	☐N/A	9
Sample Labels match COC:	☑Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	14
Trip Blank Present:	☐Yes	☑No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

ALLC003rev.08, 15Feb2013 SCUR Form - mod

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

August 06, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, CH2M Hill
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman,WA-Grain Handling
Pace Project No.:	10441787

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441787001	**Atwood-S-073118**	Water	07/31/18 00:00	08/02/18 09:45
10441787002	**Atwood-H-073118**	Water	07/31/18 00:00	08/02/18 09:45
10441787003	**Trip Blank**	Water	07/31/18 00:00	08/02/18 09:45

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441787001	**Atwood-S-073118**	EPA 8260B	AEZ	83	PASI-M
10441787002	**Atwood-H-073118**	EPA 8260B	AEZ	83	PASI-M
10441787003	**Trip Blank**	EPA 8260B	AEZ	83	PASI-M

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(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: August 06, 2018

General Information:
3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 554502

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3012193)
  - Chloroethane

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 554502

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10441745001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3012194)
  - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3012194)
  - Acetone
  - Acrolein
  - Bromobenzene

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: August 06, 2018

QC Batch: 554502

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10441745001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Bromomethane
- Chloromethane
- Dichlorofluoromethane
- Tetrahydrofuran
- Trichlorofluoromethane

- MSD (Lab ID: 3012195)
  - Acrolein
  - Bromomethane
  - Tetrahydrofuran

Additional Comments:

Analyte Comments:

QC Batch: 554502

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- Atwood-H-073118 (Lab ID: 10441787002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Atwood-S-073118 (Lab ID: 10441787001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3012192)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3012193)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3012194)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3012195)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Trip Blank (Lab ID: 10441787003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: August 06, 2018

Analyte Comments:

QC Batch: 554502

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- Trip Blank (Lab ID: 10441787003)
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Sample: Atwood-S-073118 **Lab ID: 10441787001** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		08/03/18 17:48	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		08/03/18 17:48	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 17:48	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		08/03/18 17:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		08/03/18 17:48	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 17:48	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 17:48	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 17:48	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 17:48	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		08/03/18 17:48	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 17:48	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 17:48	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		08/03/18 17:48	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		08/03/18 17:48	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 17:48	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 17:48	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		08/03/18 17:48	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 17:48	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 17:48	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 17:48	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		08/03/18 17:48	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 17:48	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		08/03/18 17:48	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		08/03/18 17:48	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		08/03/18 17:48	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		08/03/18 17:48	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 17:48	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		08/03/18 17:48	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		08/03/18 17:48	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		08/03/18 17:48	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		08/03/18 17:48	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		08/03/18 17:48	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		08/03/18 17:48	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 17:48	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 17:48	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		08/03/18 17:48	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 17:48	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		08/03/18 17:48	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		08/03/18 17:48	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		08/03/18 17:48	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		08/03/18 17:48	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 17:48	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		08/03/18 17:48	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		08/03/18 17:48	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 17:48	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		08/03/18 17:48	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Sample: Atwood-S-073118 **Lab ID: 10441787001** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		08/03/18 17:48	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/03/18 17:48	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		08/03/18 17:48	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		08/03/18 17:48	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		08/03/18 17:48	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 17:48	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 17:48	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		08/03/18 17:48	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		08/03/18 17:48	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		08/03/18 17:48	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		08/03/18 17:48	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		08/03/18 17:48	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 17:48	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		08/03/18 17:48	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		08/03/18 17:48	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		08/03/18 17:48	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		08/03/18 17:48	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		08/03/18 17:48	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		08/03/18 17:48	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		08/03/18 17:48	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 17:48	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 17:48	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 17:48	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		08/03/18 17:48	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 17:48	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 17:48	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 17:48	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 17:48	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		08/03/18 17:48	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		08/03/18 17:48	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 17:48	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 17:48	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		08/03/18 17:48	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		08/03/18 17:48	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		08/03/18 17:48	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1		08/03/18 17:48	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		08/03/18 17:48	460-00-4	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling

Pace Project No.: 10441787

Sample: Atwood-H-073118 **Lab ID: 10441787002** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		08/03/18 18:12	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		08/03/18 18:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 18:12	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		08/03/18 18:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		08/03/18 18:12	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 18:12	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 18:12	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 18:12	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 18:12	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		08/03/18 18:12	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 18:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 18:12	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		08/03/18 18:12	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		08/03/18 18:12	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 18:12	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 18:12	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		08/03/18 18:12	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 18:12	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 18:12	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 18:12	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		08/03/18 18:12	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 18:12	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		08/03/18 18:12	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		08/03/18 18:12	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		08/03/18 18:12	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		08/03/18 18:12	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 18:12	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		08/03/18 18:12	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		08/03/18 18:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		08/03/18 18:12	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		08/03/18 18:12	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		08/03/18 18:12	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		08/03/18 18:12	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 18:12	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 18:12	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		08/03/18 18:12	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 18:12	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		08/03/18 18:12	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		08/03/18 18:12	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		08/03/18 18:12	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		08/03/18 18:12	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 18:12	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		08/03/18 18:12	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		08/03/18 18:12	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 18:12	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		08/03/18 18:12	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Sample: Atwood-H-073118 **Lab ID: 10441787002** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		08/03/18 18:12	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/03/18 18:12	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		08/03/18 18:12	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		08/03/18 18:12	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		08/03/18 18:12	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 18:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 18:12	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		08/03/18 18:12	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		08/03/18 18:12	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		08/03/18 18:12	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		08/03/18 18:12	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		08/03/18 18:12	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 18:12	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		08/03/18 18:12	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		08/03/18 18:12	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		08/03/18 18:12	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		08/03/18 18:12	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		08/03/18 18:12	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		08/03/18 18:12	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		08/03/18 18:12	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 18:12	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 18:12	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 18:12	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		08/03/18 18:12	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 18:12	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 18:12	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 18:12	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 18:12	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		08/03/18 18:12	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		08/03/18 18:12	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 18:12	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 18:12	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		08/03/18 18:12	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		08/03/18 18:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-125		1		08/03/18 18:12	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		08/03/18 18:12	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		08/03/18 18:12	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Sample: Trip Blank **Lab ID: 10441787003** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		08/03/18 12:07	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		08/03/18 12:07	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 12:07	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		08/03/18 12:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		08/03/18 12:07	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		08/03/18 12:07	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 12:07	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 12:07	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 12:07	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		08/03/18 12:07	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 12:07	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 12:07	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		08/03/18 12:07	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		08/03/18 12:07	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 12:07	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 12:07	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		08/03/18 12:07	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 12:07	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 12:07	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 12:07	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		08/03/18 12:07	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 12:07	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		08/03/18 12:07	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		08/03/18 12:07	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		08/03/18 12:07	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		08/03/18 12:07	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 12:07	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		08/03/18 12:07	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		08/03/18 12:07	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		08/03/18 12:07	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		08/03/18 12:07	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		08/03/18 12:07	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		08/03/18 12:07	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 12:07	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		08/03/18 12:07	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		08/03/18 12:07	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		08/03/18 12:07	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		08/03/18 12:07	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		08/03/18 12:07	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		08/03/18 12:07	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		08/03/18 12:07	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 12:07	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		08/03/18 12:07	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		08/03/18 12:07	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		08/03/18 12:07	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		08/03/18 12:07	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Sample: Trip Blank **Lab ID: 10441787003** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		08/03/18 12:07	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/03/18 12:07	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		08/03/18 12:07	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		08/03/18 12:07	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		08/03/18 12:07	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		08/03/18 12:07	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 12:07	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		08/03/18 12:07	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		08/03/18 12:07	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		08/03/18 12:07	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		08/03/18 12:07	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		08/03/18 12:07	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		08/03/18 12:07	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		08/03/18 12:07	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		08/03/18 12:07	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		08/03/18 12:07	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		08/03/18 12:07	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		08/03/18 12:07	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		08/03/18 12:07	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		08/03/18 12:07	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 12:07	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		08/03/18 12:07	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		08/03/18 12:07	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		08/03/18 12:07	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		08/03/18 12:07	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		08/03/18 12:07	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 12:07	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 12:07	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		08/03/18 12:07	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		08/03/18 12:07	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		08/03/18 12:07	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		08/03/18 12:07	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		08/03/18 12:07	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		08/03/18 12:07	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-125		1		08/03/18 12:07	17060-07-0	HS
Toluene-d8 (S)	99	%.	75-125		1		08/03/18 12:07	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1		08/03/18 12:07	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

QC Batch: 554502 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10441787001, 10441787002, 10441787003

METHOD BLANK: 3012192 | Matrix: Water
Associated Lab Samples: 10441787001, 10441787002, 10441787003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	08/03/18 11:14	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	08/03/18 11:14	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	08/03/18 11:14	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	08/03/18 11:14	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	08/03/18 11:14	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	08/03/18 11:14	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	08/03/18 11:14	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	08/03/18 11:14	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	08/03/18 11:14	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	08/03/18 11:14	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	08/03/18 11:14	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	08/03/18 11:14	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	08/03/18 11:14	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	08/03/18 11:14	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	08/03/18 11:14	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	08/03/18 11:14	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	08/03/18 11:14	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	08/03/18 11:14	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	08/03/18 11:14	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	08/03/18 11:14	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	08/03/18 11:14	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	08/03/18 11:14	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	08/03/18 11:14	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	08/03/18 11:14	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	08/03/18 11:14	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	08/03/18 11:14	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	08/03/18 11:14	
2-Hexanone	ug/L	<0.88	5.0	0.88	08/03/18 11:14	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	08/03/18 11:14	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	08/03/18 11:14	
Acetone	ug/L	<9.2	20.0	9.2	08/03/18 11:14	
Acrolein	ug/L	<1.2	10.0	1.2	08/03/18 11:14	
Acrylonitrile	ug/L	<0.91	10.0	0.91	08/03/18 11:14	
Benzene	ug/L	<0.10	0.50	0.10	08/03/18 11:14	
Bromobenzene	ug/L	<0.21	0.50	0.21	08/03/18 11:14	
Bromochloromethane	ug/L	<0.27	1.0	0.27	08/03/18 11:14	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	08/03/18 11:14	
Bromoform	ug/L	<0.80	4.0	0.80	08/03/18 11:14	
Bromomethane	ug/L	<1.8	4.0	1.8	08/03/18 11:14	
Carbon disulfide	ug/L	0.10J	1.0	0.078	08/03/18 11:14	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	08/03/18 11:14	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

METHOD BLANK: 3012192 Matrix: Water
Associated Lab Samples: 10441787001, 10441787002, 10441787003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	08/03/18 11:14	
Chloroethane	ug/L	<0.49	1.0	0.49	08/03/18 11:14	
Chloroform	ug/L	<0.45	1.0	0.45	08/03/18 11:14	
Chloromethane	ug/L	<0.16	4.0	0.16	08/03/18 11:14	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	08/03/18 11:14	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	08/03/18 11:14	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	08/03/18 11:14	
Dibromomethane	ug/L	<0.16	1.0	0.16	08/03/18 11:14	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	08/03/18 11:14	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	08/03/18 11:14	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	08/03/18 11:14	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	08/03/18 11:14	
Ethylbenzene	ug/L	<0.14	0.50	0.14	08/03/18 11:14	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	08/03/18 11:14	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	08/03/18 11:14	
m&p-Xylene	ug/L	<0.31	1.0	0.31	08/03/18 11:14	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	08/03/18 11:14	
Methylene Chloride	ug/L	<0.98	4.0	0.98	08/03/18 11:14	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	08/03/18 11:14	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	08/03/18 11:14	
Naphthalene	ug/L	<0.48	1.0	0.48	08/03/18 11:14	
o-Xylene	ug/L	<0.16	0.50	0.16	08/03/18 11:14	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	08/03/18 11:14	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	08/03/18 11:14	
Styrene	ug/L	<0.19	1.0	0.19	08/03/18 11:14	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	08/03/18 11:14	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	08/03/18 11:14	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	08/03/18 11:14	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	08/03/18 11:14	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	08/03/18 11:14	
Toluene	ug/L	<0.083	0.50	0.083	08/03/18 11:14	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	08/03/18 11:14	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	08/03/18 11:14	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	08/03/18 11:14	
Trichloroethene	ug/L	<0.15	0.40	0.15	08/03/18 11:14	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	08/03/18 11:14	
Vinyl acetate	ug/L	<1.1	10.0	1.1	08/03/18 11:14	
Vinyl chloride	ug/L	<0.092	0.20	0.092	08/03/18 11:14	
Xylene (Total)	ug/L	<0.31	1.5	0.31	08/03/18 11:14	
1,2-Dichloroethane-d4 (S)	%.	108	75-125		08/03/18 11:14	
4-Bromofluorobenzene (S)	%.	104	75-125		08/03/18 11:14	
Toluene-d8 (S)	%.	101	75-125		08/03/18 11:14	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

LABORATORY CONTROL SAMPLE: 3012193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.7	104	75-125	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.1	105	75-125	
1,1,2-Trichloroethane	ug/L	20	20.8	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.2	101	72-125	
1,1-Dichloroethane	ug/L	20	20.7	103	75-125	
1,1-Dichloroethene	ug/L	20	18.0	90	73-125	
1,1-Dichloropropene	ug/L	20	19.6	98	73-125	
1,2,3-Trichlorobenzene	ug/L	20	20.1	101	72-130	
1,2,3-Trichloropropane	ug/L	20	22.3	111	75-125	
1,2,4-Trichlorobenzene	ug/L	20	20.9	105	75-125	
1,2,4-Trimethylbenzene	ug/L	20	23.2	116	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	49.8	100	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	19.9	99	75-125	
1,2-Dichlorobenzene	ug/L	20	20.1	100	75-125	
1,2-Dichloroethane	ug/L	20	19.1	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	37.8	95	75-125	N2
1,2-Dichloropropane	ug/L	20	20.9	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.6	108	75-125	
1,3-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,3-Dichloropropane	ug/L	20	20.5	102	75-125	
1,4-Dichlorobenzene	ug/L	20	19.9	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	423	106	75-125	
2,2,4-Trimethylpentane	ug/L	20	22.3	111	64-130	N2
2,2-Dichloropropane	ug/L	20	20.6	103	68-129	
2-Butanone (MEK)	ug/L	100	106	106	65-126	
2-Chlorotoluene	ug/L	20	21.7	109	75-125	
2-Hexanone	ug/L	100	116	116	75-134	
4-Chlorotoluene	ug/L	20	22.2	111	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	75-131	
Acetone	ug/L	100	107	107	68-150	
Acrolein	ug/L	200	239	120	63-149	
Acrylonitrile	ug/L	200	221	110	75-125	
Benzene	ug/L	20	19.2	96	75-125	
Bromobenzene	ug/L	20	18.9	94	75-125	
Bromochloromethane	ug/L	20	20.8	104	75-125	
Bromodichloromethane	ug/L	20	20.5	102	75-125	
Bromoform	ug/L	20	20.7	103	70-125	
Bromomethane	ug/L	20	26.5	133	30-145	
Carbon disulfide	ug/L	20	17.2	86	67-125	
Carbon tetrachloride	ug/L	20	21.1	105	75-125	
Chlorobenzene	ug/L	20	19.3	96	75-125	
Chloroethane	ug/L	20	26.3	132	73-131	L3
Chloroform	ug/L	20	21.8	109	75-125	
Chloromethane	ug/L	20	24.3	122	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.7	104	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.8	104	75-125	

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Pace Analytical
www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

LABORATORY CONTROL SAMPLE: 3012193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.7	98	75-125	
Dibromomethane	ug/L	20	20.4	102	75-125	
Dichlorodifluoromethane	ug/L	20	23.8	119	64-127	
Dichlorofluoromethane	ug/L	20	24.3	122	75-125	N2
Diisopropyl ether	ug/L	20	20.7	103	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.9	105	75-125	
Ethylbenzene	ug/L	20	20.9	104	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.2	106	75-130	
Isopropylbenzene (Cumene)	ug/L	20	22.0	110	75-125	
m&p-Xylene	ug/L	40	43.2	108	75-125	
Methyl-tert-butyl ether	ug/L	20	19.8	99	75-125	
Methylene Chloride	ug/L	20	19.7	98	72-125	
n-Butylbenzene	ug/L	20	23.8	119	75-125	
n-Propylbenzene	ug/L	20	21.2	106	75-125	
Naphthalene	ug/L	20	18.9	95	61-136	
o-Xylene	ug/L	20	21.3	107	75-125	
p-Isopropyltoluene	ug/L	20	21.4	107	75-125	
sec-Butylbenzene	ug/L	20	22.8	114	75-125	
Styrene	ug/L	20	22.6	113	75-125	
tert-Amylmethyl ether	ug/L	20	19.7	99	75-125	
tert-Butyl Alcohol	ug/L	200	222	111	75-125	
tert-Butylbenzene	ug/L	20	21.5	108	75-125	
Tetrachloroethene	ug/L	20	17.9	89	75-125	
Tetrahydrofuran	ug/L	200	188	94	64-150	
Toluene	ug/L	20	18.8	94	75-125	
trans-1,2-Dichloroethene	ug/L	20	17.1	86	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.9	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.2	54.7	109	57-126	
Trichloroethene	ug/L	20	20.4	102	75-125	
Trichlorofluoromethane	ug/L	20	22.9	114	74-126	
Vinyl acetate	ug/L	20	20.3	101	72-129	
Vinyl chloride	ug/L	20	23.8	119	71-130	
Xylene (Total)	ug/L	60	64.5	107	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			104	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012194 3012195

Parameter	Units	10441745001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	16.7	16.5	84	82	75-125	2	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.3	20.6	112	103	75-129	8	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	16.7	16.1	84	80	75-125	4	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	17.5	16.4	88	82	75-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012194 3012195

Parameter	Units	10441745001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	22.6	20.7	113	103	75-136	9	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.7	20.1	109	101	75-125	8	30	
1,1-Dichloroethene	ug/L	ND	20	20	20.1	18.4	100	92	75-127	9	30	
1,1-Dichloropropene	ug/L	ND	20	20	21.3	20.0	106	100	75-129	6	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	16.7	16.0	83	80	72-137	4	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	17.9	16.6	89	83	75-125	7	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	16.7	16.4	84	82	69-131	2	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	17.8	18.6	89	93	71-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	40.1	38.3	80	77	61-127	5	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	16.5	15.5	83	77	75-125	7	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	15.0	15.9	75	80	75-125	6	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.1	17.2	95	86	69-125	10	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	41.0	37.6	102	94	75-125	8	30	N2
1,2-Dichloropropane	ug/L	ND	20	20	18.3	17.6	91	88	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	16.8	17.1	84	85	75-125	2	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	15.6	16.4	78	82	75-125	5	30	
1,3-Dichloropropane	ug/L	ND	20	20	16.9	15.9	85	79	75-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	15.3	15.7	77	78	74-125	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	319	320	80	80	67-128	0	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	24.3	22.6	122	113	65-150	7	30	N2
2,2-Dichloropropane	ug/L	ND	20	20	22.2	20.8	111	104	65-136	6	30	
2-Butanone (MEK)	ug/L	ND	100	100	102	91.8	102	92	59-125	10	30	
2-Chlorotoluene	ug/L	ND	20	20	16.6	17.4	83	87	73-126	5	30	
2-Hexanone	ug/L	ND	100	100	93.7	89.8	94	90	68-138	4	30	
4-Chlorotoluene	ug/L	ND	20	20	17.0	18.0	85	90	75-125	6	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.2	85.2	89	85	73-125	5	30	
Acetone	ug/L	ND	100	100	73.0	75.0	73	75	75-150	3	30	M1
Acrolein	ug/L	ND	200	200	371	351	185	175	53-150	6	30	M1
Acrylonitrile	ug/L	ND	200	200	208	200	104	100	69-127	3	30	
Benzene	ug/L	1.1	20	20	20.0	19.3	94	91	74-125	3	30	
Bromobenzene	ug/L	ND	20	20	14.8	15.5	74	77	75-125	4	30	M1
Bromochloromethane	ug/L	ND	20	20	19.7	19.0	99	95	75-125	4	30	
Bromodichloromethane	ug/L	ND	20	20	17.7	16.9	89	84	75-125	5	30	
Bromoform	ug/L	ND	20	20	16.5	15.8	82	79	68-125	4	30	
Bromomethane	ug/L	ND	20	20	31.3	31.0	156	155	37-149	1	30	M1
Carbon disulfide	ug/L	ND	20	20	18.3	17.3	91	86	66-139	6	30	
Carbon tetrachloride	ug/L	ND	20	20	22.2	20.9	111	104	75-127	6	30	
Chlorobenzene	ug/L	ND	20	20	15.9	15.9	79	80	75-125	0	30	
Chloroethane	ug/L	ND	20	20	29.9	26.6	149	133	73-134	12	30	M0
Chloroform	ug/L	ND	20	20	21.8	20.0	109	100	71-125	9	30	
Chloromethane	ug/L	ND	20	20	26.8	24.3	134	122	58-133	10	30	M1
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.6	20.2	108	101	75-125	7	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.0	15.7	85	78	71-125	8	30	
Dibromochloromethane	ug/L	ND	20	20	16.2	15.4	81	77	75-125	5	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012194 3012195

Parameter	Units	10441745001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	ND	20	20	17.2	16.4	86	82	75-125	5	30	
Dichlorodifluoromethane	ug/L	1.6	20	20	29.7	25.7	140	120	70-150	14	30	
Dichlorofluoromethane	ug/L	ND	20	20	27.8	23.9	139	119	75-126	15	30	M1,N2
Diisopropyl ether	ug/L	ND	20	20	19.6	19.2	98	96	66-131	2	30	
Ethyl-tert-butyl ether	ug/L	ND	20	20	19.4	18.8	97	94	74-125	3	30	
Ethylbenzene	ug/L	ND	20	20	16.8	17.3	84	87	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	20.0	17.8	100	89	60-150	12	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	17.2	18.3	86	92	75-125	7	30	
m&p-Xylene	ug/L	ND	40	40	34.4	36.3	86	91	75-125	5	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.6	18.2	98	91	75-125	7	30	
Methylene Chloride	ug/L	ND	20	20	18.7	17.3	93	87	72-125	7	30	
n-Butylbenzene	ug/L	ND	20	20	19.8	19.3	99	96	73-140	3	30	
n-Propylbenzene	ug/L	ND	20	20	16.6	17.3	83	86	75-126	4	30	
Naphthalene	ug/L	ND	20	20	14.3	15.0	71	75	61-136	5	30	
o-Xylene	ug/L	ND	20	20	16.4	17.6	82	88	75-125	7	30	
p-Isopropyltoluene	ug/L	ND	20	20	17.7	17.2	88	86	73-133	3	30	
sec-Butylbenzene	ug/L	ND	20	20	18.9	18.7	94	94	75-132	1	30	
Styrene	ug/L	ND	20	20	17.2	18.1	86	90	71-125	5	30	
tert-Amylmethyl ether	ug/L	ND	20	20	18.4	17.6	92	88	71-125	4	30	
tert-Butyl Alcohol	ug/L	ND	200	200	178	178	89	89	72-130	0	30	
tert-Butylbenzene	ug/L	ND	20	20	17.3	17.9	86	90	75-126	4	30	
Tetrachloroethene	ug/L	ND	20	20	15.2	15.5	76	77	75-125	2	30	
Tetrahydrofuran	ug/L	ND	200	200	142	130	71	65	75-150	9	30	M1
Toluene	ug/L	ND	20	20	15.8	16.0	79	80	74-125	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.4	17.5	97	87	75-125	10	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.4	16.6	87	83	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	50.2	50.2	42.5	41.0	85	82	57-125	4	30	
Trichloroethene	ug/L	ND	20	20	18.3	17.2	92	86	75-125	6	30	
Trichlorofluoromethane	ug/L	ND	20	20	27.1	22.6	136	113	75-135	18	30	M1
Vinyl acetate	ug/L	ND	20	20	20.0	18.8	100	94	57-136	7	30	
Vinyl chloride	ug/L	ND	20	20	27.8	23.9	139	119	74-141	15	30	
Xylene (Total)	ug/L	ND	60	60	50.8	54.0	85	90	75-125	6	30	
1,2-Dichloroethane-d4 (S)	%.						117	110	75-125			
4-Bromofluorobenzene (S)	%.						104	104	75-125			
Toluene-d8 (S)	%.						97	98	75-125			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441787

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441787001	**Atwood-S-073118**	EPA 8260B	554502		
10441787002	**Atwood-H-073118**	EPA 8260B	554502		
10441787003	**Trip Blank**	EPA 8260B	554502		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Requ[est Document]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fie[lds must be completed accurately.]

WO# : 10441787

10441787

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (8010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	8010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Atwood-S-073118	WT	G	7/31	—	—	—	—	3				X				X												001
2	Atwood-H-073118	↓	↓	↓	—	—	—	—	3				X				X												002
3	Trip Blank	WT	—	—	—	—	—	—	2				X				X												003
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jt C Jacobs	8/1/18	1500	[signature] Pace	8/2/18	945	3.4	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: Jt C

DATE Signed: 7/31/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #:

WO#: 10441787

PM: JMG Due Date: 08/09/18

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7786 3845

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.3 **Cooler Temp Corrected (°C):** 3.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** MD 8/2/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6. JMG 080218
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. NO MS/MSD
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. 1/3 Atwood-S and 1/3 Atwood-H have less than 6mm.
3 Trip Blanks Present? - 2 Present	☐ Yes	☑ No	☐ N/A	15. 2/2 TB have less than 6mm
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 150954				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP and dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1155	Temp: 3.3	Corrected Temp: 3.4
Time: 1215	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 08/02/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
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August 16, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
California Certification #2973
Alaska Certification UST-107
Montana Certificate #CERT0103
California Certification #2973
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441789001	**Atwood-H-073118**	Water	07/31/18 00:00	08/02/18 09:45
10441789002	**Atwood-S-073118**	Water	07/31/18 00:00	08/02/18 09:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441789001	**Atwood-H-073118**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10441789002	**Atwood-S-073118**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	DCL	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10441789001	**Atwood-H-073118**					
EPA 6010D	Barium, Dissolved	41.3	ug/L	10.0	08/07/18 11:33	
EPA 6010D	Calcium, Dissolved	26100	ug/L	500	08/07/18 11:33	
EPA 6010D	Copper, Dissolved	17.4	ug/L	10.0	08/07/18 11:33	
EPA 6010D	Iron, Dissolved	81.3	ug/L	50.0	08/07/18 11:33	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	08/07/18 11:33	
EPA 6010D	Magnesium, Dissolved	11500	ug/L	500	08/07/18 11:33	
EPA 6010D	Manganese, Dissolved	32.6	ug/L	5.0	08/07/18 11:33	
EPA 6010D	Potassium, Dissolved	4030	ug/L	2500	08/07/18 11:33	
EPA 6010D	Sodium, Dissolved	14700	ug/L	1000	08/07/18 11:33	
EPA 6010D	Vanadium, Dissolved	0.82J	ug/L	15.0	08/07/18 11:33	
EPA 6010D	Zinc, Dissolved	72.5	ug/L	20.0	08/07/18 11:33	
SM 2320B	Alkalinity, Total as CaCO3	147	mg/L	5.0	08/10/18 13:03	
SM 2540C	Total Dissolved Solids	192	mg/L	10.0	08/06/18 12:37	
EPA 300.0	Chloride	1.3	mg/L	1.2	08/03/18 03:10	B
EPA 300.0	Nitrate as N	0.042J	mg/L	0.10	08/03/18 03:10	H3
EPA 300.0	Sulfate	3.6	mg/L	1.2	08/03/18 03:10	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.018J	mg/L	0.10	08/04/18 14:49	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	08/08/18 12:40	
10441789002	**Atwood-S-073118**					
RSK 175	Methane	5.9J	ug/L	10.0	08/06/18 09:45	
EPA 6010D	Barium, Dissolved	29.4	ug/L	10.0	08/07/18 11:35	
EPA 6010D	Beryllium, Dissolved	0.15J	ug/L	5.0	08/07/18 11:35	
EPA 6010D	Cadmium, Dissolved	0.32J	ug/L	3.0	08/07/18 11:35	
EPA 6010D	Calcium, Dissolved	34200	ug/L	500	08/07/18 11:35	
EPA 6010D	Chromium, Dissolved	0.73J	ug/L	10.0	08/07/18 11:35	
EPA 6010D	Copper, Dissolved	72.6	ug/L	10.0	08/07/18 11:35	
EPA 6010D	Iron, Dissolved	42.1J	ug/L	50.0	08/07/18 11:35	
EPA 6010D	Lead, Dissolved	4.9J	ug/L	10.0	08/07/18 11:35	
EPA 6010D	Magnesium, Dissolved	10900	ug/L	500	08/07/18 11:35	
EPA 6010D	Manganese, Dissolved	2.6J	ug/L	5.0	08/07/18 11:35	
EPA 6010D	Potassium, Dissolved	1250J	ug/L	2500	08/07/18 11:35	
EPA 6010D	Sodium, Dissolved	12100	ug/L	1000	08/07/18 11:35	
EPA 6010D	Vanadium, Dissolved	11.2J	ug/L	15.0	08/07/18 11:35	
EPA 6010D	Zinc, Dissolved	1460	ug/L	20.0	08/07/18 11:35	
SM 2320B	Alkalinity, Total as CaCO3	157	mg/L	5.0	08/10/18 13:06	
SM 2540C	Total Dissolved Solids	199	mg/L	10.0	08/06/18 12:37	
EPA 300.0	Chloride	1.5	mg/L	1.2	08/03/18 03:25	B
EPA 300.0	Nitrate as N	1.3	mg/L	0.10	08/03/18 03:25	H3
EPA 300.0	Sulfate	4.3	mg/L	1.2	08/03/18 03:25	B
EPA 353.2	Nitrogen, NO2 plus NO3	1.4	mg/L	0.10	08/04/18 14:54	
SM 5310C	Total Organic Carbon	2.2	mg/L	1.0	08/08/18 12:56	

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 555885

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10442296004,10442299001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3019065)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 3019066)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman,WA-Grain Handling
Pace Project No.:	10441789

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 117170

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2081721001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 505018)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- Atwood-H-073118 (Lab ID: 10441789001)
- Atwood-S-073118 (Lab ID: 10441789002)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 554344

B: Analyte was detected in the associated method blank.
- BLANK for HBN 554344 [WETA/362 (Lab ID: 3011185)
  - Chloride
  - Sulfate

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 554344

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10441776001,10441776002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3011187)
  - Chloride
- MSD (Lab ID: 3011188)
  - Chloride
- MSD (Lab ID: 3011190)
  - Chloride
  - Nitrate as N
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 554673

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3013716)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3013717)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: August 16, 2018

General Information:
2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 149610

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 591579)
  - Total Organic Carbon
- MSD (Lab ID: 591580)
  - Total Organic Carbon

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Sample: Atwood-H-073118 **Lab ID: 10441789001** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		08/06/18 09:38	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		08/06/18 09:38	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		08/06/18 09:38	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	08/06/18 16:11	08/07/18 11:33	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	08/06/18 16:11	08/07/18 11:33	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	08/06/18 16:11	08/07/18 11:33	7440-38-2	
Barium, Dissolved	**41.3**	ug/L	10.0	0.18	1	08/06/18 16:11	08/07/18 11:33	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	08/06/18 16:11	08/07/18 11:33	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	08/06/18 16:11	08/07/18 11:33	7440-43-9	
Calcium, Dissolved	**26100**	ug/L	500	13.9	1	08/06/18 16:11	08/07/18 11:33	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	08/06/18 16:11	08/07/18 11:33	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	08/06/18 16:11	08/07/18 11:33	7440-48-4	
Copper, Dissolved	**17.4**	ug/L	10.0	1.2	1	08/06/18 16:11	08/07/18 11:33	7440-50-8	
Iron, Dissolved	**81.3**	ug/L	50.0	4.3	1	08/06/18 16:11	08/07/18 11:33	7439-89-6	
Lead, Dissolved	**2.4J**	ug/L	10.0	2.0	1	08/06/18 16:11	08/07/18 11:33	7439-92-1	
Magnesium, Dissolved	**11500**	ug/L	500	9.8	1	08/06/18 16:11	08/07/18 11:33	7439-95-4	
Manganese, Dissolved	**32.6**	ug/L	5.0	0.22	1	08/06/18 16:11	08/07/18 11:33	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	08/06/18 16:11	08/07/18 11:33	7440-02-0	
Potassium, Dissolved	**4030**	ug/L	2500	310	1	08/06/18 16:11	08/07/18 11:33	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	08/06/18 16:11	08/07/18 11:33	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	08/06/18 16:11	08/07/18 11:33	7440-22-4	
Sodium, Dissolved	**14700**	ug/L	1000	21.5	1	08/06/18 16:11	08/07/18 11:33	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	08/06/18 16:11	08/07/18 11:33	7440-28-0	
Vanadium, Dissolved	**0.82J**	ug/L	15.0	0.29	1	08/06/18 16:11	08/07/18 11:33	7440-62-2	
Zinc, Dissolved	**72.5**	ug/L	20.0	2.5	1	08/06/18 16:11	08/07/18 11:33	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	08/15/18 14:40	08/15/18 20:00	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**147**	mg/L	5.0	1.0	1		08/10/18 13:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**192**	mg/L	10.0	5.0	1		08/06/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		08/07/18 14:07	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.28	1		08/03/18 03:10	16887-00-6	B
Nitrate as N	**0.042J**	mg/L	0.10	0.015	1		08/03/18 03:10	14797-55-8	H3
Sulfate	**3.6**	mg/L	1.2	0.19	1		08/03/18 03:10	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Sample: Atwood-H-073118 **Lab ID: 10441789001** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.018J**	mg/L	0.10	0.011	1		08/04/18 14:49		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	08/09/18 08:45	08/09/18 11:46		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		08/08/18 12:40	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Sample: Atwood-S-073118 **Lab ID: 10441789002** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		08/06/18 09:45	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		08/06/18 09:45	74-85-1	
Methane	**5.9J**	ug/L	10.0	4.9	1		08/06/18 09:45	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	08/06/18 16:11	08/07/18 11:35	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	08/06/18 16:11	08/07/18 11:35	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	08/06/18 16:11	08/07/18 11:35	7440-38-2	
Barium, Dissolved	**29.4**	ug/L	10.0	0.18	1	08/06/18 16:11	08/07/18 11:35	7440-39-3	
Beryllium, Dissolved	**0.15J**	ug/L	5.0	0.12	1	08/06/18 16:11	08/07/18 11:35	7440-41-7	
Cadmium, Dissolved	**0.32J**	ug/L	3.0	0.26	1	08/06/18 16:11	08/07/18 11:35	7440-43-9	
Calcium, Dissolved	**34200**	ug/L	500	13.9	1	08/06/18 16:11	08/07/18 11:35	7440-70-2	
Chromium, Dissolved	**0.73J**	ug/L	10.0	0.49	1	08/06/18 16:11	08/07/18 11:35	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	08/06/18 16:11	08/07/18 11:35	7440-48-4	
Copper, Dissolved	**72.6**	ug/L	10.0	1.2	1	08/06/18 16:11	08/07/18 11:35	7440-50-8	
Iron, Dissolved	**42.1J**	ug/L	50.0	4.3	1	08/06/18 16:11	08/07/18 11:35	7439-89-6	
Lead, Dissolved	**4.9J**	ug/L	10.0	2.0	1	08/06/18 16:11	08/07/18 11:35	7439-92-1	
Magnesium, Dissolved	**10900**	ug/L	500	9.8	1	08/06/18 16:11	08/07/18 11:35	7439-95-4	
Manganese, Dissolved	**2.6J**	ug/L	5.0	0.22	1	08/06/18 16:11	08/07/18 11:35	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	08/06/18 16:11	08/07/18 11:35	7440-02-0	
Potassium, Dissolved	**1250J**	ug/L	2500	310	1	08/06/18 16:11	08/07/18 11:35	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	08/06/18 16:11	08/07/18 11:35	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	08/06/18 16:11	08/07/18 11:35	7440-22-4	
Sodium, Dissolved	**12100**	ug/L	1000	21.5	1	08/06/18 16:11	08/07/18 11:35	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	08/06/18 16:11	08/07/18 11:35	7440-28-0	
Vanadium, Dissolved	**11.2J**	ug/L	15.0	0.29	1	08/06/18 16:11	08/07/18 11:35	7440-62-2	
Zinc, Dissolved	**1460**	ug/L	20.0	2.5	1	08/06/18 16:11	08/07/18 11:35	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	08/15/18 14:40	08/15/18 20:02	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**157**	mg/L	5.0	1.0	1		08/10/18 13:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**199**	mg/L	10.0	5.0	1		08/06/18 12:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		08/07/18 14:07	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.28	1		08/03/18 03:25	16887-00-6	B
Nitrate as N	**1.3**	mg/L	0.10	0.015	1		08/03/18 03:25	14797-55-8	H3
Sulfate	**4.3**	mg/L	1.2	0.19	1		08/03/18 03:25	14808-79-8	B

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Sample: Atwood-S-073118 **Lab ID: 10441789002** Collected: 07/31/18 00:00 Received: 08/02/18 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.4**	mg/L	0.10	0.011	1		08/04/18 14:54		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	08/09/18 08:45	08/09/18 11:46		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.20	1		08/08/18 12:56	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 554813 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3014145 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	08/06/18 09:06	
Ethene	ug/L	<2.9	10.0	2.9	08/06/18 09:06	
Methane	ug/L	<4.9	10.0	4.9	08/06/18 09:06	

LABORATORY CONTROL SAMPLE & LCSD: 3014146 3014147

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	108	96	95	85-115	1	20	
Ethene	ug/L	106	105	102	99	96	85-115	2	20	
Methane	ug/L	60.7	58.9	57.7	97	95	85-115	2	20	

SAMPLE DUPLICATE: 3014148

Parameter	Units	10441840001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	16.5	16.2	1	20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	4850	4730	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 556972 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3024211 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	08/15/18 19:56	

LABORATORY CONTROL SAMPLE: 3024212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.4	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024213 3024214

Parameter	Units	40173765006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.10	5	5	4.8	5.0	96	101	80-120	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 554785 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3014062 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	08/07/18 11:12	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	08/07/18 11:12	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	08/07/18 11:12	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	08/07/18 11:12	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	08/07/18 11:12	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	08/07/18 11:12	
Calcium, Dissolved	ug/L	<13.9	500	13.9	08/07/18 11:12	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	08/07/18 11:12	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	08/07/18 11:12	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	08/07/18 11:12	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	08/07/18 11:12	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	08/07/18 11:12	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	08/07/18 11:12	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	08/07/18 11:12	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	08/07/18 11:12	
Potassium, Dissolved	ug/L	<310	2500	310	08/07/18 11:12	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	08/07/18 11:12	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	08/07/18 11:12	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	08/07/18 11:12	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	08/07/18 11:12	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	08/07/18 11:12	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	08/07/18 11:12	

LABORATORY CONTROL SAMPLE: 3014063

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20400	102	80-120	
Antimony, Dissolved	ug/L	1000	978	98	80-120	
Arsenic, Dissolved	ug/L	1000	976	98	80-120	
Barium, Dissolved	ug/L	1000	984	98	80-120	
Beryllium, Dissolved	ug/L	1000	999	100	80-120	
Cadmium, Dissolved	ug/L	1000	984	98	80-120	
Calcium, Dissolved	ug/L	20000	19400	97	80-120	
Chromium, Dissolved	ug/L	1000	980	98	80-120	
Cobalt, Dissolved	ug/L	1000	987	99	80-120	
Copper, Dissolved	ug/L	1000	955	95	80-120	
Iron, Dissolved	ug/L	20000	19400	97	80-120	
Lead, Dissolved	ug/L	1000	994	99	80-120	
Magnesium, Dissolved	ug/L	20000	19500	98	80-120	
Manganese, Dissolved	ug/L	1000	1000	100	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

LABORATORY CONTROL SAMPLE: 3014063

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	985	98	80-120	
Potassium, Dissolved	ug/L	20000	19100	95	80-120	
Selenium, Dissolved	ug/L	1000	1030	103	80-120	
Silver, Dissolved	ug/L	500	490	98	80-120	
Sodium, Dissolved	ug/L	20000	18800	94	80-120	
Thallium, Dissolved	ug/L	1000	979	98	80-120	
Vanadium, Dissolved	ug/L	1000	981	98	80-120	
Zinc, Dissolved	ug/L	1000	997	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014205 3014206

Parameter	Units	10441847001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	20000	20000	21700	21500	108	107	75-125	1	20	
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1010	105	101	75-125	4	20	
Arsenic, Dissolved	ug/L	ND	1000	1000	1050	1040	105	104	75-125	1	20	
Barium, Dissolved	ug/L	86.1	1000	1000	1110	1100	102	101	75-125	1	20	
Beryllium, Dissolved	ug/L	ND	1000	1000	1060	1060	106	106	75-125	0	20	
Cadmium, Dissolved	ug/L	ND	1000	1000	1050	1040	105	104	75-125	1	20	
Calcium, Dissolved	ug/L	99600	20000	20000	121000	118000	109	94	75-125	2	20	
Chromium, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	75-125	1	20	
Copper, Dissolved	ug/L	ND	1000	1000	1020	1020	102	102	75-125	0	20	
Iron, Dissolved	ug/L	ND	20000	20000	20500	20200	102	101	75-125	1	20	
Lead, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	75-125	1	20	
Magnesium, Dissolved	ug/L	29400	20000	20000	50600	50500	106	106	75-125	0	20	
Manganese, Dissolved	ug/L	764	1000	1000	1810	1820	104	106	75-125	1	20	
Nickel, Dissolved	ug/L	ND	1000	1000	1010	1010	101	100	75-125	0	20	
Potassium, Dissolved	ug/L	2750	20000	20000	23700	23400	105	103	75-125	1	20	
Selenium, Dissolved	ug/L	ND	1000	1000	1080	1070	108	107	75-125	1	20	
Silver, Dissolved	ug/L	ND	500	500	524	524	105	105	75-125	0	20	
Sodium, Dissolved	ug/L	7250	20000	20000	27100	26900	99	98	75-125	1	20	
Thallium, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	1000	1000	1040	1040	104	104	75-125	0	20	
Zinc, Dissolved	ug/L	ND	1000	1000	1030	1020	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 555885 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3019062 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	08/10/18 11:54	

LABORATORY CONTROL SAMPLE & LCSD: 3019063 3019064

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	42.5	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019065 3019066

Parameter	Units	10442296004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	874	40	40	995	954	303	202	80-120	4	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019067 3019068

Parameter	Units	10442299001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	113	40	40	157	156	111	109	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 554786 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3014066 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	08/06/18 12:37	

LABORATORY CONTROL SAMPLE & LCSD: 3014067 | 3014068

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	958	954	96	95	80-120	0	10	

SAMPLE DUPLICATE: 3014069

Parameter	Units	10441488001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1950	2010	3	10	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 117170 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 505015 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	08/07/18 14:05	

LABORATORY CONTROL SAMPLE: 505016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.21	107	90-110	

MATRIX SPIKE SAMPLE: 505018

Parameter	Units	2081721001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.65	1	1.4	74	75-125	M1

SAMPLE DUPLICATE: 505017

Parameter	Units	2081721001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.65	0.63	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 554344 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3011185 Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.32J	1.2	0.28	08/03/18 06:42	
Nitrate as N	mg/L	<0.015	0.10	0.015	08/03/18 06:42	
Sulfate	mg/L	0.48J	1.2	0.19	08/03/18 06:42	

LABORATORY CONTROL SAMPLE: 3011186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.0	96	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	12.8	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011187 3011188

Parameter	Units	10441776001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.4	12.5	12.5	14.5	14.5	88	89	90-110	0	20	M1
Nitrate as N	mg/L	0.22	1	1	1.1	1.1	92	92	90-110	0	20	
Sulfate	mg/L	6.1	12.5	12.5	17.5	17.6	91	92	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011189 3011190

Parameter	Units	10441776002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.1	12.5	12.5	14.4	14.2	90	89	90-110	1	20	M1
Nitrate as N	mg/L	0.63	1	1	1.5	1.5	91	89	90-110	2	20	M1
Sulfate	mg/L	8.0	12.5	12.5	19.5	19.2	92	89	90-110	2	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 554673 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3013714 Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.011	0.10	0.011	08/04/18 14:59	

LABORATORY CONTROL SAMPLE: 3013715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013716 3013717

Parameter	Units	10441789002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.4	1	1	2.4	2.4	103	103	90-110	0	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013718 3013719

Parameter	Units	10441789001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.018J	1	1	1.1	1.1	107	108	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 555636 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 3017583 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	08/09/18 11:42	

LABORATORY CONTROL SAMPLE: 3017584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	306	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017585 3017586

Parameter	Units	10441913001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	1520	2500	2500	3910	4000	96	99	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017587 3017588

Parameter	Units	10441690001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	250	250	268	282	101	107	90-110	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

QC Batch: 149610 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C TOC
Associated Lab Samples: 10441789001, 10441789002

METHOD BLANK: 591577 | Matrix: Water
Associated Lab Samples: 10441789001, 10441789002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	08/08/18 11:15	

LABORATORY CONTROL SAMPLE: 591578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 591579 591580

Parameter	Units	10442289001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	307	250	250	559	562	101	102	80-120	1	20	E

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman,WA-Grain Handling
Pace Project No.: 10441789

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441789001	**Atwood-H-073118**	RSK 175	554813		
10441789002	**Atwood-S-073118**	RSK 175	554813		
10441789001	**Atwood-H-073118**	EPA 3010	554785	EPA 6010D	555004
10441789002	**Atwood-S-073118**	EPA 3010	554785	EPA 6010D	555004
10441789001	**Atwood-H-073118**	EPA 7470A	556972	EPA 7470A	557133
10441789002	**Atwood-S-073118**	EPA 7470A	556972	EPA 7470A	557133
10441789001	**Atwood-H-073118**	SM 2320B	555885		
10441789002	**Atwood-S-073118**	SM 2320B	555885		
10441789001	**Atwood-H-073118**	SM 2540C	554786		
10441789002	**Atwood-S-073118**	SM 2540C	554786		
10441789001	**Atwood-H-073118**	SM 4500-S-2 D	117170		
10441789002	**Atwood-S-073118**	SM 4500-S-2 D	117170		
10441789001	**Atwood-H-073118**	EPA 300.0	554344		
10441789002	**Atwood-S-073118**	EPA 300.0	554344		
10441789001	**Atwood-H-073118**	EPA 353.2	554673		
10441789002	**Atwood-S-073118**	EPA 353.2	554673		
10441789001	**Atwood-H-073118**	EPA 410.4	555636	EPA 410.4	555704
10441789002	**Atwood-S-073118**	EPA 410.4	555636	EPA 410.4	555704
10441789001	**Atwood-H-073118**	SM 5310C	149610		
10441789002	**Atwood-S-073118**	SM 5310C	149610		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 10441789

10441789

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Collected date year: 2018

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Atwood-H-073118	WT	G	7/31	–	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			001
2	Atwood-S-073118	↓	↓	↓	–	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X			002
3																													
4																													
5																													
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8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jth Ci / Jacobs	8/1/18	1500	[signature] Pace	8/2/18	945	3.4	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: Jth Ci

DATE Signed: 7/31/18

Pace Analytical

Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #: WO# : 10441789
PM: JMG Due Date: 08/16/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7786 3845

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.3 **Cooler Temp Corrected (°C):** 3.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** MD 8/2/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6. JMG 080218
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests? JMG080218	☒ Yes	☐ No	~~N/A~~	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ~~NaOH~~ Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-2: 1/1 1/1 2N 1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK and sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1155	Temp: 3.3	Corrected Temp: 3.4
Time: 1215	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 08/02/18

Note: Whenever there is a discrepancy affecting North Carolina comp... of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Workorder: 10441789 Workorder Name: 1497 Freeman,WA-Grain Handling Owner Received Date: 8/2/2018 Results Requested By: 8/16/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	H2SO4	DG9U			Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	Atwood-H-073118	PS	7/31/2018 00:00	10441789001	Water	1	2				X	
2	Atwood-S-073118	PS	7/31/2018 00:00	10441789002	Water	1	2				X	
3												
4												
5												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle/Pace	8/3/18 1610	BJ Ch 8.3.18	2000
2	BJ Ch 8.4.18	0:30	B Mathews	8/6/18 0900
3				

Comments

Cooler Temperature on Receipt 0.4 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO# : 12113400
PM: HRZ Due Date: 08/16/18
CLIENT: PACE MPLS

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.1 Cooler Temp Corrected °C: 0.4

Temp should be above freezing to 6°C Correction Factor: 0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Date and Initials of Person Examining Contents: 8.4.18 AL

	Yes	No	N/A	Comments:
Chain of Custody Present?	☒	☐	☐	1.
Chain of Custody Filled Out?	☒	☐	☐	2.
Chain of Custody Relinquished?	☒	☐	☐	3.
Sampler Name and Signature on COC?	BM ☒	~~☒~~	☐	4.
Samples Arrived within Hold Time?	☒	☐	☐	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	BM ☒	~~☒~~	☐	6.
Rush Turn Around Time Requested?	☐	☒	☐	7.
Sufficient Volume?	☒	☐	☐	8.
Correct Containers Used?	☒	☐	☐	9.
-Pace Containers Used?	☒	☐	☐	
Containers Intact?	☒	☐	☐	10.
Filtered Volume Received for Dissolved Tests?	☐	☐	☒	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒	☐	☐	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒	☐	☐	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐	☐	☒	13.
Headspace in VOA Vials (>6mm)?	☐	☐	☒	14.
Trip Blank Present?	☐	☐	☒	15.
Trip Blank Custody Seals Present?	☐	☐	☒	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather [signature] Date: 8/7/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO# : 2081638

2081638

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of

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www.pacelabs.com

Workorder: 10441789 **Workorder Name:** 1497 Freeman,WA-Grain Handling **Owner Received Date:** 8/2/2018 **Results Requested By:** 8/16/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

JMG 08/02/18

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: NaOH+Zinc Acetate	Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	Atwood-H-073118	PS	7/31/2018 00:00	10441789001	Water	1	1	X	
2	Atwood-S-073118	PS	7/31/2018 00:00	10441789002	Water	1	1	X	
3									
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle/Pace	8/3/18 1600	Fed Ex	
2	Fed Ex	8-4-18 935	/Pace	8-4-18 935
3				

Comments

Cooler Temperature on Receipt 1.0 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical™

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Rec

WO# : 2081638

PM: CMM Due Date: 08/16/18

CLIENT: PASI-MINN

Projec

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 08-04-18 [illegible]

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☒ Yes	☐ No	☐ N/A	1
Chain of Custody Present:	☒ Yes	☐ No	☐ N/A	2
Chain of Custody Complete:	☒ Yes	☐ No	☐ N/A	3
Chain of Custody Relinquished:	☒ Yes	☐ No	☐ N/A	4
Sampler Name & Signature on COC:	☒ Yes	☐ No	☐ N/A	5
Samples Arrived within Hold Time:	☒ Yes	☐ No	☐ N/A	6
Sufficient Volume:	☒ Yes	☐ No	☐ N/A	7
Correct Containers Used:	☒ Yes	☐ No	☐ N/A	8
Filtered vol. Rec. for Diss. tests	☐ Yes	☐ No	☒ N/A	9
Sample Labels match COC:	☒ Yes	☐ No	☐ N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☒ Yes	☐ No	☐ N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☒ Yes	☐ No	☐ N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☒ Yes	☐ No	☐ N/A	13 If No, was preservative added? ☐ Yes ☐ No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐ Yes	☐ No	☒ N/A	14
Trip Blank Present:	☐ Yes	☒ No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449082

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449082001	**MW6s-GW-092518**	Water	09/25/18 08:15	09/26/18 11:20
10449082002	**MW11s-GW-092518**	Water	09/25/18 09:00	09/26/18 11:20
10449082003	**MW10s-GW-092518**	Water	09/25/18 09:30	09/26/18 11:20
10449082004	**MW12s-GW-092518**	Water	09/25/18 09:45	09/26/18 11:20
10449082005	**MW7s-GW-092518**	Water	09/25/18 10:15	09/26/18 11:20
10449082006	**MW1s-GW-092518**	Water	09/25/18 10:30	09/26/18 11:20
10449082007	**MW8s-GW-092518**	Water	09/25/18 11:00	09/26/18 11:20
10449082008	**MW9s-GW-092518**	Water	09/25/18 11:30	09/26/18 11:20
10449082009	**FD1-092518**	Water	09/25/18 07:00	09/26/18 11:20
10449082010	**FD2-092518**	Water	09/25/18 07:30	09/26/18 11:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449082001	**MW6s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082002	**MW11s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082003	**MW10s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082004	**MW12s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082005	**MW7s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082006	**MW1s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082007	**MW8s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082008	**MW9s-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449082009	**FD1-092518**	EPA 8260B	AEZ	83	PASI-M
10449082010	**FD2-092518**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449082003	**MW10s-GW-092518**					
EPA 8260B	Carbon tetrachloride	0.84	ug/L	0.50	10/06/18 02:01	
10449082004	**MW12s-GW-092518**					
EPA 8260B	Carbon tetrachloride	0.97	ug/L	0.50	10/06/18 02:25	
10449082005	**MW7s-GW-092518**					
EPA 8260B	Carbon tetrachloride	2.0	ug/L	0.50	10/06/18 02:49	
10449082007	**MW8s-GW-092518**					
EPA 8260B	Carbon tetrachloride	157	ug/L	5.0	10/08/18 15:13	
EPA 8260B	Chloroform	46.2	ug/L	1.0	10/06/18 05:38	
10449082008	**MW9s-GW-092518**					
EPA 8260B	Carbon tetrachloride	408	ug/L	12.5	10/06/18 04:01	
EPA 8260B	Chloroform	54.8	ug/L	2.0	10/06/18 04:50	
10449082010	**FD2-092518**					
EPA 8260B	Carbon disulfide	0.27J	ug/L	1.0	10/06/18 03:37	L2
EPA 8260B	Carbon tetrachloride	409	ug/L	12.5	10/08/18 14:49	
EPA 8260B	Chloroform	58.3	ug/L	1.0	10/06/18 03:37	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449082

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
10 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- FD1-092518 (Lab ID: 10449082009)
- FD2-092518 (Lab ID: 10449082010)
- MW10s-GW-092518 (Lab ID: 10449082003)
- MW11s-GW-092518 (Lab ID: 10449082002)
- MW12s-GW-092518 (Lab ID: 10449082004)
- MW1s-GW-092518 (Lab ID: 10449082006)
- MW6s-GW-092518 (Lab ID: 10449082001)
- MW7s-GW-092518 (Lab ID: 10449082005)
- MW8s-GW-092518 (Lab ID: 10449082007)
- MW9s-GW-092518 (Lab ID: 10449082008)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 567573

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3081980)
  - Carbon tetrachloride
- MSD (Lab ID: 3081981)
  - Carbon tetrachloride

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3079728)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FD2-092518 (Lab ID: 10449082010)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3079729)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3081980)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3081981)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW10s-GW-092518 (Lab ID: 10449082003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW11s-GW-092518 (Lab ID: 10449082002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW12s-GW-092518 (Lab ID: 10449082004)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW1s-GW-092518 (Lab ID: 10449082006)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 567573

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MW6s-GW-092518 (Lab ID: 10449082001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW7s-GW-092518 (Lab ID: 10449082005)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW8s-GW-092518 (Lab ID: 10449082007)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW9s-GW-092518 (Lab ID: 10449082008)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FD1-092518 (Lab ID: 10449082009)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW6s-GW-092518 **Lab ID: 10449082001** Collected: 09/25/18 08:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 01:13	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 01:13	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:13	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 01:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 01:13	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:13	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:13	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:13	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 01:13	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 01:13	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:13	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:13	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 01:13	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 01:13	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 01:13	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 01:13	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 01:13	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 01:13	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 01:13	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:13	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 01:13	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:13	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 01:13	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 01:13	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 01:13	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 01:13	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:13	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 01:13	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 01:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 01:13	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 01:13	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 01:13	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 01:13	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 01:13	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 01:13	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 01:13	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 01:13	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 01:13	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 01:13	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 01:13	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/06/18 01:13	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:13	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 01:13	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 01:13	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 01:13	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 01:13	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW6s-GW-092518 **Lab ID: 10449082001** Collected: 09/25/18 08:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 01:13	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 01:13	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 01:13	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 01:13	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 01:13	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 01:13	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 01:13	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 01:13	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:13	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 01:13	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 01:13	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 01:13	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:13	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 01:13	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 01:13	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 01:13	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 01:13	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 01:13	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 01:13	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 01:13	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 01:13	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:13	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 01:13	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 01:13	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 01:13	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 01:13	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:13	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:13	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 01:13	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 01:13	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:13	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 01:13	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 01:13	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 01:13	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/06/18 01:13	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		10/06/18 01:13	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/06/18 01:13	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW11s-GW-092518 **Lab ID: 10449082002** Collected: 09/25/18 09:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 01:37	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 01:37	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:37	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 01:37	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 01:37	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:37	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:37	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:37	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 01:37	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 01:37	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:37	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:37	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 01:37	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 01:37	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 01:37	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 01:37	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 01:37	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 01:37	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 01:37	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:37	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 01:37	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:37	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 01:37	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 01:37	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 01:37	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 01:37	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:37	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 01:37	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 01:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 01:37	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 01:37	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 01:37	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 01:37	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 01:37	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 01:37	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 01:37	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 01:37	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 01:37	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 01:37	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 01:37	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/06/18 01:37	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:37	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 01:37	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 01:37	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 01:37	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 01:37	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW11s-GW-092518 **Lab ID: 10449082002** Collected: 09/25/18 09:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 01:37	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 01:37	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 01:37	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 01:37	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 01:37	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 01:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 01:37	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 01:37	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 01:37	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 01:37	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 01:37	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 01:37	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 01:37	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 01:37	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 01:37	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 01:37	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 01:37	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 01:37	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 01:37	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 01:37	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 01:37	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 01:37	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 01:37	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 01:37	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 01:37	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 01:37	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:37	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:37	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 01:37	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 01:37	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 01:37	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 01:37	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 01:37	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 01:37	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%.	75-125		1		10/06/18 01:37	17060-07-0	
Toluene-d8 (S)	107	%.	75-125		1		10/06/18 01:37	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/06/18 01:37	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW10s-GW-092518 **Lab ID: 10449082003** Collected: 09/25/18 09:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 02:01	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:01	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:01	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 02:01	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:01	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:01	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:01	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 02:01	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 02:01	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:01	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:01	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 02:01	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:01	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:01	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:01	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:01	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:01	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:01	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:01	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 02:01	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:01	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 02:01	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 02:01	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 02:01	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 02:01	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:01	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 02:01	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:01	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 02:01	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 02:01	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:01	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 02:01	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 02:01	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 02:01	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:01	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:01	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 02:01	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 02:01	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 02:01	75-15-0	L2
Carbon tetrachloride	**0.84**	ug/L	0.50	0.19	1		10/06/18 02:01	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:01	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 02:01	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 02:01	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:01	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 02:01	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW10s-GW-092518 **Lab ID: 10449082003** Collected: 09/25/18 09:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:01	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 02:01	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:01	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:01	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:01	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:01	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 02:01	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:01	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:01	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 02:01	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 02:01	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 02:01	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:01	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 02:01	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 02:01	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 02:01	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 02:01	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 02:01	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 02:01	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 02:01	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 02:01	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:01	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 02:01	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:01	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 02:01	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:01	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:01	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:01	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 02:01	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:01	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:01	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:01	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:01	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 02:01	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/06/18 02:01	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/06/18 02:01	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/06/18 02:01	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW12s-GW-092518 **Lab ID: 10449082004** Collected: 09/25/18 09:45 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 02:25	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:25	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:25	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 02:25	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:25	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:25	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:25	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 02:25	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 02:25	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:25	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:25	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 02:25	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:25	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:25	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:25	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:25	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:25	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:25	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:25	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 02:25	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:25	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 02:25	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 02:25	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 02:25	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 02:25	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:25	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 02:25	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 02:25	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 02:25	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:25	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 02:25	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 02:25	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 02:25	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:25	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:25	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 02:25	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 02:25	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 02:25	75-15-0	L2
Carbon tetrachloride	**0.97**	ug/L	0.50	0.19	1		10/06/18 02:25	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:25	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 02:25	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 02:25	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:25	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 02:25	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW12s-GW-092518 **Lab ID: 10449082004** Collected: 09/25/18 09:45 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:25	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 02:25	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:25	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:25	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:25	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 02:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:25	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:25	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 02:25	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 02:25	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 02:25	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:25	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 02:25	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 02:25	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 02:25	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 02:25	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 02:25	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 02:25	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 02:25	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 02:25	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:25	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 02:25	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:25	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 02:25	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:25	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:25	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:25	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 02:25	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:25	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:25	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:25	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:25	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 02:25	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/06/18 02:25	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		10/06/18 02:25	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		10/06/18 02:25	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW7s-GW-092518 **Lab ID: 10449082005** Collected: 09/25/18 10:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 02:49	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:49	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:49	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:49	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 02:49	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:49	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:49	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:49	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 02:49	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 02:49	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:49	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:49	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 02:49	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:49	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:49	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:49	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:49	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:49	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:49	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:49	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 02:49	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:49	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 02:49	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 02:49	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 02:49	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 02:49	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:49	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 02:49	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:49	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 02:49	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 02:49	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:49	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 02:49	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 02:49	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 02:49	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 02:49	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 02:49	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 02:49	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 02:49	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 02:49	75-15-0	L2
Carbon tetrachloride	**2.0**	ug/L	0.50	0.19	1		10/06/18 02:49	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:49	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 02:49	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 02:49	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 02:49	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 02:49	124-48-1	

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW7s-GW-092518 **Lab ID: 10449082005** Collected: 09/25/18 10:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:49	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 02:49	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 02:49	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 02:49	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 02:49	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 02:49	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 02:49	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:49	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 02:49	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 02:49	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 02:49	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 02:49	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 02:49	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 02:49	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 02:49	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 02:49	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 02:49	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 02:49	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 02:49	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 02:49	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 02:49	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 02:49	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 02:49	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 02:49	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 02:49	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 02:49	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:49	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:49	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 02:49	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 02:49	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 02:49	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 02:49	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 02:49	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 02:49	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/06/18 02:49	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		10/06/18 02:49	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/06/18 02:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW1s-GW-092518 **Lab ID: 10449082006** Collected: 09/25/18 10:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 03:13	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 03:13	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:13	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 03:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 03:13	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:13	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:13	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:13	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 03:13	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 03:13	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:13	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:13	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 03:13	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 03:13	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 03:13	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 03:13	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 03:13	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 03:13	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 03:13	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:13	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 03:13	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:13	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 03:13	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 03:13	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 03:13	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 03:13	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:13	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 03:13	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 03:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 03:13	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 03:13	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 03:13	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 03:13	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 03:13	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 03:13	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 03:13	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 03:13	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 03:13	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 03:13	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 03:13	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/06/18 03:13	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:13	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 03:13	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/06/18 03:13	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 03:13	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 03:13	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449082

Sample: MW1s-GW-092518 **Lab ID: 10449082006** Collected: 09/25/18 10:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 03:13	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 03:13	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 03:13	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 03:13	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 03:13	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 03:13	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 03:13	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 03:13	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:13	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 03:13	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 03:13	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 03:13	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:13	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 03:13	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 03:13	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 03:13	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 03:13	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 03:13	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 03:13	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 03:13	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 03:13	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:13	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 03:13	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 03:13	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 03:13	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 03:13	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:13	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:13	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 03:13	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 03:13	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:13	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 03:13	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 03:13	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 03:13	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/06/18 03:13	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		10/06/18 03:13	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/06/18 03:13	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW8s-GW-092518 **Lab ID: 10449082007** Collected: 09/25/18 11:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 05:38	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 05:38	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 05:38	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 05:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 05:38	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 05:38	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 05:38	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 05:38	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 05:38	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 05:38	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 05:38	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 05:38	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 05:38	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 05:38	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 05:38	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 05:38	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 05:38	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 05:38	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 05:38	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 05:38	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 05:38	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 05:38	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 05:38	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 05:38	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 05:38	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 05:38	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 05:38	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 05:38	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 05:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 05:38	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 05:38	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 05:38	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 05:38	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 05:38	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 05:38	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 05:38	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 05:38	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 05:38	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 05:38	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/06/18 05:38	75-15-0	L2
Carbon tetrachloride	**157**	ug/L	5.0	1.9	10		10/08/18 15:13	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 05:38	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 05:38	75-00-3	
Chloroform	**46.2**	ug/L	1.0	0.45	1		10/06/18 05:38	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 05:38	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 05:38	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW8s-GW-092518 **Lab ID: 10449082007** Collected: 09/25/18 11:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 05:38	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 05:38	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 05:38	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 05:38	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 05:38	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 05:38	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 05:38	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 05:38	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 05:38	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 05:38	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 05:38	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 05:38	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 05:38	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 05:38	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 05:38	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 05:38	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 05:38	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 05:38	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 05:38	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 05:38	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 05:38	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 05:38	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 05:38	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 05:38	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 05:38	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 05:38	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 05:38	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 05:38	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 05:38	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 05:38	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 05:38	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 05:38	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 05:38	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 05:38	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/06/18 05:38	17060-07-0	
Toluene-d8 (S)	107	%.	75-125		1		10/06/18 05:38	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/06/18 05:38	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW9s-GW-092518 **Lab ID: 10449082008** Collected: 09/25/18 11:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.39**	ug/L	1.0	0.39	2		10/06/18 04:50	630-20-6	
1,1,1-Trichloroethane	**<0.27**	ug/L	2.0	0.27	2		10/06/18 04:50	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.34**	ug/L	1.0	0.34	2		10/06/18 04:50	79-34-5	
1,1,2-Trichloroethane	**<0.36**	ug/L	1.0	0.36	2		10/06/18 04:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.43**	ug/L	2.0	0.43	2		10/06/18 04:50	76-13-1	
1,1-Dichloroethane	**<0.34**	ug/L	1.0	0.34	2		10/06/18 04:50	75-34-3	
1,1-Dichloroethene	**<0.32**	ug/L	1.0	0.32	2		10/06/18 04:50	75-35-4	
1,1-Dichloropropene	**<0.40**	ug/L	2.0	0.40	2		10/06/18 04:50	563-58-6	
1,2,3-Trichlorobenzene	**<0.41**	ug/L	2.0	0.41	2		10/06/18 04:50	87-61-6	
1,2,3-Trichloropropane	**<0.51**	ug/L	8.0	0.51	2		10/06/18 04:50	96-18-4	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	2.0	0.40	2		10/06/18 04:50	120-82-1	
1,2,4-Trimethylbenzene	**<0.39**	ug/L	2.0	0.39	2		10/06/18 04:50	95-63-6	
1,2-Dibromo-3-chloropropane	**<3.3**	ug/L	8.0	3.3	2		10/06/18 04:50	96-12-8	
1,2-Dibromoethane (EDB)	**<0.48**	ug/L	2.0	0.48	2		10/06/18 04:50	106-93-4	
1,2-Dichlorobenzene	**<0.27**	ug/L	1.0	0.27	2		10/06/18 04:50	95-50-1	
1,2-Dichloroethane	**<0.44**	ug/L	1.0	0.44	2		10/06/18 04:50	107-06-2	
1,2-Dichloroethene (Total)	**<0.54**	ug/L	2.0	0.54	2		10/06/18 04:50	540-59-0	N2
1,2-Dichloropropane	**<0.33**	ug/L	8.0	0.33	2		10/06/18 04:50	78-87-5	
1,3,5-Trimethylbenzene	**<0.24**	ug/L	1.0	0.24	2		10/06/18 04:50	108-67-8	
1,3-Dichlorobenzene	**<0.32**	ug/L	1.0	0.32	2		10/06/18 04:50	541-73-1	
1,3-Dichloropropane	**<0.14**	ug/L	1.0	0.14	2		10/06/18 04:50	142-28-9	
1,4-Dichlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/06/18 04:50	106-46-7	
1,4-Dioxane (p-Dioxane)	**<32.6**	ug/L	400	32.6	2		10/06/18 04:50	123-91-1	
2,2,4-Trimethylpentane	**<0.38**	ug/L	8.0	0.38	2		10/06/18 04:50	540-84-1	N2
2,2-Dichloropropane	**<0.34**	ug/L	2.0	0.34	2		10/06/18 04:50	594-20-7	
2-Butanone (MEK)	**<2.0**	ug/L	10.0	2.0	2		10/06/18 04:50	78-93-3	
2-Chlorotoluene	**<0.33**	ug/L	1.0	0.33	2		10/06/18 04:50	95-49-8	
2-Hexanone	**<1.8**	ug/L	10.0	1.8	2		10/06/18 04:50	591-78-6	
4-Chlorotoluene	**<0.27**	ug/L	2.0	0.27	2		10/06/18 04:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.84**	ug/L	10.0	0.84	2		10/06/18 04:50	108-10-1	
Acetone	**<18.5**	ug/L	40.0	18.5	2		10/06/18 04:50	67-64-1	
Acrolein	**<2.4**	ug/L	20.0	2.4	2		10/06/18 04:50	107-02-8	
Acrylonitrile	**<1.8**	ug/L	20.0	1.8	2		10/06/18 04:50	107-13-1	
Benzene	**<0.20**	ug/L	1.0	0.20	2		10/06/18 04:50	71-43-2	
Bromobenzene	**<0.41**	ug/L	1.0	0.41	2		10/06/18 04:50	108-86-1	
Bromochloromethane	**<0.55**	ug/L	2.0	0.55	2		10/06/18 04:50	74-97-5	
Bromodichloromethane	**<0.43**	ug/L	1.0	0.43	2		10/06/18 04:50	75-27-4	
Bromoform	**<1.6**	ug/L	8.0	1.6	2		10/06/18 04:50	75-25-2	
Bromomethane	**<3.6**	ug/L	8.0	3.6	2		10/06/18 04:50	74-83-9	
Carbon disulfide	**<0.16**	ug/L	2.0	0.16	2		10/06/18 04:50	75-15-0	L2
Carbon tetrachloride	**408**	ug/L	12.5	4.7	25		10/06/18 04:01	56-23-5	
Chlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/06/18 04:50	108-90-7	
Chloroethane	**<0.98**	ug/L	2.0	0.98	2		10/06/18 04:50	75-00-3	
Chloroform	**54.8**	ug/L	2.0	0.90	2		10/06/18 04:50	67-66-3	
Chloromethane	**<0.31**	ug/L	8.0	0.31	2		10/06/18 04:50	74-87-3	
Dibromochloromethane	**<0.25**	ug/L	2.0	0.25	2		10/06/18 04:50	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: MW9s-GW-092518 **Lab ID: 10449082008** Collected: 09/25/18 11:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.33**	ug/L	2.0	0.33	2		10/06/18 04:50	74-95-3	
Dichlorodifluoromethane	**<0.47**	ug/L	2.0	0.47	2		10/06/18 04:50	75-71-8	
Dichlorofluoromethane	**<0.28**	ug/L	2.0	0.28	2		10/06/18 04:50	75-43-4	N2
Diisopropyl ether	**<0.27**	ug/L	2.0	0.27	2		10/06/18 04:50	108-20-3	
Ethyl-tert-butyl ether	**<0.36**	ug/L	1.0	0.36	2		10/06/18 04:50	637-92-3	
Ethylbenzene	**<0.28**	ug/L	1.0	0.28	2		10/06/18 04:50	100-41-4	
Hexachloro-1,3-butadiene	**<0.62**	ug/L	2.0	0.62	2		10/06/18 04:50	87-68-3	
Isopropylbenzene (Cumene)	**<0.37**	ug/L	2.0	0.37	2		10/06/18 04:50	98-82-8	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.0	0.32	2		10/06/18 04:50	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	8.0	2.0	2		10/06/18 04:50	75-09-2	
Naphthalene	**<0.96**	ug/L	2.0	0.96	2		10/06/18 04:50	91-20-3	
Styrene	**<0.37**	ug/L	2.0	0.37	2		10/06/18 04:50	100-42-5	
Tetrachloroethene	**<0.34**	ug/L	1.0	0.34	2		10/06/18 04:50	127-18-4	
Tetrahydrofuran	**<4.4**	ug/L	20.0	4.4	2		10/06/18 04:50	109-99-9	
Toluene	**<0.17**	ug/L	1.0	0.17	2		10/06/18 04:50	108-88-3	
Trichloroethene	**<0.30**	ug/L	0.80	0.30	2		10/06/18 04:50	79-01-6	
Trichlorofluoromethane	**<0.46**	ug/L	1.0	0.46	2		10/06/18 04:50	75-69-4	
Vinyl acetate	**<2.2**	ug/L	20.0	2.2	2		10/06/18 04:50	108-05-4	
Vinyl chloride	**<0.18**	ug/L	0.40	0.18	2		10/06/18 04:50	75-01-4	
Xylene (Total)	**<0.62**	ug/L	6.0	0.62	2		10/06/18 04:50	1330-20-7	
cis-1,2-Dichloroethene	**<0.31**	ug/L	1.0	0.31	2		10/06/18 04:50	156-59-2	
cis-1,3-Dichloropropene	**<0.41**	ug/L	2.0	0.41	2		10/06/18 04:50	10061-01-5	
m&p-Xylene	**<0.62**	ug/L	4.0	0.62	2		10/06/18 04:50	179601-23-1	
n-Butylbenzene	**<0.48**	ug/L	2.0	0.48	2		10/06/18 04:50	104-51-8	
n-Propylbenzene	**<0.20**	ug/L	2.0	0.20	2		10/06/18 04:50	103-65-1	
o-Xylene	**<0.32**	ug/L	2.0	0.32	2		10/06/18 04:50	95-47-6	
p-Isopropyltoluene	**<0.30**	ug/L	2.0	0.30	2		10/06/18 04:50	99-87-6	
sec-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/06/18 04:50	135-98-8	
tert-Amylmethyl ether	**<0.22**	ug/L	1.0	0.22	2		10/06/18 04:50	994-05-8	
tert-Butyl Alcohol	**<2.5**	ug/L	20.0	2.5	2		10/06/18 04:50	75-65-0	
tert-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/06/18 04:50	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	2		10/06/18 04:50	156-60-5	
trans-1,3-Dichloropropene	**<0.36**	ug/L	2.0	0.36	2		10/06/18 04:50	10061-02-6	
trans-1,4-Dichloro-2-butene	**<4.1**	ug/L	20.0	4.1	2		10/06/18 04:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		2		10/06/18 04:50	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		2		10/06/18 04:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		2		10/06/18 04:50	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: FD1-092518 **Lab ID: 10449082009** Collected: 09/25/18 07:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 12:53	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 12:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 12:53	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 12:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 12:53	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 12:53	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 12:53	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 12:53	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 12:53	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 12:53	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 12:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 12:53	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 12:53	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 12:53	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 12:53	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 12:53	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 12:53	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 12:53	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 12:53	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 12:53	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 12:53	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 12:53	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 12:53	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 12:53	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 12:53	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 12:53	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 12:53	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 12:53	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 12:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 12:53	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 12:53	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 12:53	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 12:53	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 12:53	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 12:53	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 12:53	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 12:53	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 12:53	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 12:53	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 12:53	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 12:53	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 12:53	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 12:53	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 12:53	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 12:53	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 12:53	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: FD1-092518 **Lab ID: 10449082009** Collected: 09/25/18 07:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 12:53	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 12:53	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 12:53	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 12:53	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 12:53	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 12:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 12:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 12:53	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 12:53	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 12:53	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 12:53	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 12:53	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 12:53	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 12:53	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 12:53	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 12:53	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 12:53	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 12:53	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 12:53	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 12:53	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 12:53	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 12:53	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 12:53	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 12:53	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 12:53	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 12:53	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 12:53	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 12:53	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 12:53	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 12:53	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 12:53	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 12:53	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 12:53	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 12:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1		10/09/18 12:53	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/09/18 12:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/09/18 12:53	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: FD2-092518 **Lab ID: 10449082010** Collected: 09/25/18 07:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/06/18 03:37	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 03:37	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:37	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/06/18 03:37	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/06/18 03:37	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:37	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:37	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:37	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/06/18 03:37	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/06/18 03:37	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:37	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:37	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/06/18 03:37	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/06/18 03:37	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 03:37	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 03:37	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/06/18 03:37	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 03:37	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 03:37	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:37	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/06/18 03:37	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:37	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/06/18 03:37	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/06/18 03:37	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/06/18 03:37	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/06/18 03:37	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:37	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/06/18 03:37	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/06/18 03:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/06/18 03:37	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/06/18 03:37	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/06/18 03:37	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/06/18 03:37	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/06/18 03:37	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/06/18 03:37	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/06/18 03:37	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/06/18 03:37	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/06/18 03:37	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/06/18 03:37	74-83-9	
Carbon disulfide	**0.27J**	ug/L	1.0	0.078	1		10/06/18 03:37	75-15-0	L2
Carbon tetrachloride	**409**	ug/L	12.5	4.7	25		10/08/18 14:49	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:37	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/06/18 03:37	75-00-3	
Chloroform	**58.3**	ug/L	1.0	0.45	1		10/06/18 03:37	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/06/18 03:37	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/06/18 03:37	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Sample: FD2-092518 **Lab ID: 10449082010** Collected: 09/25/18 07:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/06/18 03:37	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/06/18 03:37	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/06/18 03:37	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/06/18 03:37	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/06/18 03:37	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/06/18 03:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/06/18 03:37	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/06/18 03:37	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/06/18 03:37	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/06/18 03:37	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/06/18 03:37	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/06/18 03:37	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/06/18 03:37	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/06/18 03:37	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/06/18 03:37	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/06/18 03:37	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/06/18 03:37	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/06/18 03:37	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/06/18 03:37	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/06/18 03:37	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/06/18 03:37	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/06/18 03:37	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/06/18 03:37	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/06/18 03:37	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/06/18 03:37	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/06/18 03:37	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:37	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:37	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/06/18 03:37	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/06/18 03:37	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/06/18 03:37	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/06/18 03:37	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/06/18 03:37	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/06/18 03:37	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/06/18 03:37	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		10/06/18 03:37	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/06/18 03:37	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

QC Batch: 567573 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449082001, 10449082002, 10449082003, 10449082004, 10449082005, 10449082006, 10449082007, 10449082008, 10449082010

METHOD BLANK: 3079728 | Matrix: Water
Associated Lab Samples: 10449082001, 10449082002, 10449082003, 10449082004, 10449082005, 10449082006, 10449082007, 10449082008, 10449082010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/06/18 00:49	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/06/18 00:49	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/06/18 00:49	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/06/18 00:49	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/06/18 00:49	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/06/18 00:49	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/06/18 00:49	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/06/18 00:49	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/06/18 00:49	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/06/18 00:49	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/06/18 00:49	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/06/18 00:49	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/06/18 00:49	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/06/18 00:49	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/06/18 00:49	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/06/18 00:49	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/06/18 00:49	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/06/18 00:49	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/06/18 00:49	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/06/18 00:49	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/06/18 00:49	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/06/18 00:49	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/06/18 00:49	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/06/18 00:49	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/06/18 00:49	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/06/18 00:49	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/06/18 00:49	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/06/18 00:49	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/06/18 00:49	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/06/18 00:49	
Acetone	ug/L	<9.2	20.0	9.2	10/06/18 00:49	
Acrolein	ug/L	<1.2	10.0	1.2	10/06/18 00:49	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/06/18 00:49	
Benzene	ug/L	<0.10	0.50	0.10	10/06/18 00:49	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/06/18 00:49	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/06/18 00:49	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/06/18 00:49	
Bromoform	ug/L	<0.80	4.0	0.80	10/06/18 00:49	
Bromomethane	ug/L	<1.8	4.0	1.8	10/06/18 00:49	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/06/18 00:49	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

METHOD BLANK: 3079728 Matrix: Water

Associated Lab Samples: 10449082001, 10449082002, 10449082003, 10449082004, 10449082005, 10449082006, 10449082007, 10449082008, 10449082010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/06/18 00:49	
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/06/18 00:49	
Chloroethane	ug/L	<0.49	1.0	0.49	10/06/18 00:49	
Chloroform	ug/L	<0.45	1.0	0.45	10/06/18 00:49	
Chloromethane	ug/L	<0.16	4.0	0.16	10/06/18 00:49	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/06/18 00:49	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/06/18 00:49	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/06/18 00:49	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/06/18 00:49	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/06/18 00:49	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/06/18 00:49	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/06/18 00:49	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/06/18 00:49	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/06/18 00:49	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/06/18 00:49	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/06/18 00:49	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/06/18 00:49	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/06/18 00:49	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/06/18 00:49	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/06/18 00:49	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/06/18 00:49	
Naphthalene	ug/L	<0.48	1.0	0.48	10/06/18 00:49	
o-Xylene	ug/L	<0.16	1.0	0.16	10/06/18 00:49	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/06/18 00:49	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/06/18 00:49	
Styrene	ug/L	<0.19	1.0	0.19	10/06/18 00:49	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/06/18 00:49	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/06/18 00:49	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/06/18 00:49	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/06/18 00:49	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/06/18 00:49	
Toluene	ug/L	<0.083	0.50	0.083	10/06/18 00:49	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/06/18 00:49	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/06/18 00:49	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/06/18 00:49	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/06/18 00:49	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/06/18 00:49	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/06/18 00:49	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/06/18 00:49	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/06/18 00:49	
1,2-Dichloroethane-d4 (S)	%.	99	75-125		10/06/18 00:49	
4-Bromofluorobenzene (S)	%.	100	75-125		10/06/18 00:49	
Toluene-d8 (S)	%.	106	75-125		10/06/18 00:49	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

LABORATORY CONTROL SAMPLE: 3079729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.3	93	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	75-125	
1,1,2-Trichloroethane	ug/L	10	9.8	98	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.2	92	72-125	
1,1-Dichloroethane	ug/L	10	9.5	95	75-125	
1,1-Dichloroethene	ug/L	10	9.5	95	73-125	
1,1-Dichloropropene	ug/L	10	9.3	93	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.0	90	72-130	
1,2,3-Trichloropropane	ug/L	10	9.3	93	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.0	90	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.8	88	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.0	92	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.7	87	75-125	
1,2-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.7	89	75-125	N2
1,2-Dichloropropane	ug/L	10	9.6	96	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.4	94	75-125	
1,4-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	175J	88	75-125	
2,2,4-Trimethylpentane	ug/L	10	9.0	90	64-130	N2
2,2-Dichloropropane	ug/L	10	8.7	87	68-129	
2-Butanone (MEK)	ug/L	50	45.5	91	65-126	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
2-Hexanone	ug/L	50	45.3	91	75-134	
4-Chlorotoluene	ug/L	10	9.1	91	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.2	88	75-131	
Acetone	ug/L	50	50.9	102	68-150	
Acrolein	ug/L	100	83.7	84	63-149	
Acrylonitrile	ug/L	101	91.4	91	75-125	
Benzene	ug/L	10	9.2	92	75-125	
Bromobenzene	ug/L	10	9.5	95	75-125	
Bromochloromethane	ug/L	10	8.8	88	75-125	
Bromodichloromethane	ug/L	10	9.3	93	75-125	
Bromoform	ug/L	10	10	100	70-125	
Bromomethane	ug/L	10	9.1	91	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.2	102	75-125	
Chlorobenzene	ug/L	10	9.4	94	75-125	
Chloroethane	ug/L	10	10.4	104	73-131	
Chloroform	ug/L	10	8.5	85	75-125	
Chloromethane	ug/L	10	10	100	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.0	90	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.5	85	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

LABORATORY CONTROL SAMPLE: 3079729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	9.6	96	75-125	
Dibromomethane	ug/L	10	9.5	95	75-125	
Dichlorodifluoromethane	ug/L	10	9.5	95	64-127	
Dichlorofluoromethane	ug/L	10	9.8	98	75-125	N2
Diisopropyl ether	ug/L	10	8.7	87	75-125	
Ethyl-tert-butyl ether	ug/L	10	8.9	89	75-125	
Ethylbenzene	ug/L	10	9.4	94	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.4	104	75-130	
Isopropylbenzene (Cumene)	ug/L	10	9.1	91	75-125	
m&p-Xylene	ug/L	20	17.9	90	75-125	
Methyl-tert-butyl ether	ug/L	10	9.2	92	75-125	
Methylene Chloride	ug/L	10	9.1	91	72-125	
n-Butylbenzene	ug/L	10	9.1	91	75-125	
n-Propylbenzene	ug/L	10	9.0	90	75-125	
Naphthalene	ug/L	10	8.3	83	61-136	
o-Xylene	ug/L	10	8.6	86	75-125	
p-Isopropyltoluene	ug/L	10	9.3	93	75-125	
sec-Butylbenzene	ug/L	10	9.2	92	75-125	
Styrene	ug/L	10	8.6	86	75-125	
tert-Amylmethyl ether	ug/L	10	9.0	90	75-125	
tert-Butyl Alcohol	ug/L	100	91.4	91	75-125	
tert-Butylbenzene	ug/L	10	9.1	91	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	94.7	95	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.7	87	75-125	
trans-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	21.3	85	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	10.2	102	74-126	
Vinyl acetate	ug/L	10	8.0J	80	72-129	
Vinyl chloride	ug/L	10	10.3	103	71-130	
Xylene (Total)	ug/L	30	26.5	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			98	75-125	
4-Bromofluorobenzene (S)	%.			98	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081980 3081981

Parameter	Units	10450733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.1	20.0	101	100	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.0	20.7	105	104	75-129	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.3	19.4	97	97	75-125	1	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.7	20.8	103	104	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081980 3081981

Parameter	Units	10450733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	20.7	20.6	103	103	75-136	0	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.4	21.6	107	108	75-125	1	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	23.1	23.3	115	116	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.5	20.6	102	103	75-129	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.1	20.2	100	101	72-137	0	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.4	19.6	102	98	75-125	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.0	20.1	100	101	69-131	1	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.8	19.8	99	99	71-125	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	49.2	48.5	98	97	61-127	1	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.0	19.8	100	99	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.4	21.4	107	107	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	19.1	95	95	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	40.4	41.4	101	104	75-125	2	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.9	20.7	104	103	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.3	19.5	97	98	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	22.1	22.1	111	110	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	20.4	20.7	102	104	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.7	20.9	103	105	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	378	400	95	100	67-128	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.0	18.5	95	92	65-150	3	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	19.7	20.0	98	100	65-136	1	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	95.2	93.3	95	93	59-125	2	30	
2-Chlorotoluene	ug/L	<0.16	20	20	23.0	22.8	115	114	73-126	1	30	
2-Hexanone	ug/L	<0.88	100	100	97.7	96.5	98	97	68-138	1	30	
4-Chlorotoluene	ug/L	<0.13	20	20	20.1	19.9	101	100	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	91.9	94	92	73-125	2	30	
Acetone	ug/L	<9.2	100	100	98.5	97.6	99	98	75-150	1	30	
Acrolein	ug/L	<1.2	200	200	170	168	85	84	53-150	1	30	
Acrylonitrile	ug/L	<0.91	202	202	195	192	96	95	69-127	1	30	
Benzene	ug/L	<0.10	20	20	20.6	20.7	103	103	74-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	21.5	21.2	107	106	75-125	1	30	
Bromochloromethane	ug/L	<0.27	20	20	20.3	21.0	102	105	75-125	3	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.2	20.0	101	100	75-125	1	30	
Bromoform	ug/L	<0.80	20	20	20.6	20.3	103	101	68-125	2	30	
Bromomethane	ug/L	<1.8	20	20	21.2	23.3	106	117	37-149	9	30	
Carbon disulfide	ug/L	<0.078	20	20	18.4	18.6	92	93	66-139	1	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.8	21.0	104	105	75-127	1	30	E
Chlorobenzene	ug/L	<0.17	20	20	20.3	20.5	102	102	75-125	1	30	
Chloroethane	ug/L	<0.49	20	20	21.9	23.4	110	117	73-134	6	30	
Chloroform	ug/L	<0.45	20	20	19.7	19.2	99	96	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	21.5	22.7	107	114	58-133	6	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	20.7	99	104	75-125	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	18.7	19.0	93	95	71-125	2	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.9	20.2	100	101	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081980 3081981

Parameter	Units	10450733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	102	75-125	2	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.5	23.2	113	116	70-150	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.8	22.5	109	113	75-126	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	19.3	19.8	97	99	66-131	2	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.7	20.3	99	102	74-125	3	30	
Ethylbenzene	ug/L	<0.14	20	20	22.2	22.2	111	111	75-125	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	24.1	24.0	121	120	60-150	0	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	21.2	104	106	75-125	2	30	
m&p-Xylene	ug/L	<0.31	40	40	41.5	41.6	104	104	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.1	20.0	100	100	75-125	0	30	
Methylene Chloride	ug/L	<0.98	20	20	18.5	18.3	91	90	72-125	1	30	
n-Butylbenzene	ug/L	<0.24	20	20	20.5	20.8	103	104	73-140	2	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.4	20.5	102	103	75-126	1	30	
Naphthalene	ug/L	<0.48	20	20	19.4	19.1	97	95	61-136	1	30	
o-Xylene	ug/L	<0.16	20	20	20.0	20.2	100	101	75-125	1	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.2	20.9	106	104	73-133	1	30	
sec-Butylbenzene	ug/L	<0.15	20	20	20.8	20.5	104	102	75-132	2	30	
Styrene	ug/L	<0.19	20	20	20.3	20.0	102	100	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.6	19.6	98	98	71-125	0	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	186	186	93	93	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.5	20.4	103	102	75-126	1	30	
Tetrachloroethene	ug/L	<0.17	20	20	23.5	23.7	117	118	75-125	1	30	
Tetrahydrofuran	ug/L	<2.2	200	200	205	209	103	104	75-150	2	30	
Toluene	ug/L	<0.083	20	20	19.9	20.6	100	103	74-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.5	20.7	103	103	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.3	19.3	97	96	70-125	0	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	46.1	46.1	92	92	57-125	0	30	
Trichloroethene	ug/L	<0.15	20	20	19.8	19.9	99	99	75-125	0	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.6	23.5	113	118	75-135	4	30	
Vinyl acetate	ug/L	<1.1	20	20	18.1	17.1	91	85	57-136	6	30	
Vinyl chloride	ug/L	<0.092	20	20	23.8	25.3	119	127	74-141	6	30	
Xylene (Total)	ug/L	<0.31	60	60	61.6	61.8	103	103	75-125	0	30	
1,2-Dichloroethane-d4 (S)	%.						100	99	75-125			
4-Bromofluorobenzene (S)	%.						99	99	75-125			
Toluene-d8 (S)	%.						96	100	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

QC Batch: 568084 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449082009

METHOD BLANK: 3082773 | Matrix: Water
Associated Lab Samples: 10449082009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449082009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449082

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449082001	**MW6s-GW-092518**	EPA 8260B	567573		
10449082002	**MW11s-GW-092518**	EPA 8260B	567573		
10449082003	**MW10s-GW-092518**	EPA 8260B	567573		
10449082004	**MW12s-GW-092518**	EPA 8260B	567573		
10449082005	**MW7s-GW-092518**	EPA 8260B	567573		
10449082006	**MW1s-GW-092518**	EPA 8260B	567573		
10449082007	**MW8s-GW-092518**	EPA 8260B	567573		
10449082008	**MW9s-GW-092518**	EPA 8260B	567573		
10449082009	**FD1-092518**	EPA 8260B	568084		
10449082010	**FD2-092518**	EPA 8260B	567573		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

WO# : 10449082

10449082

Requested Analysis Filtered (Y/N)

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

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ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL D	2320 Alkalinity	Chloride, Sulfate,	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Et	COD 410.4	Nitrate+Nitrite 353,		MS/MSD Requested	
1	MW6S-GW-092518	WT	G	9/25	815	—	—	—	3				X				X												01
2	MW11S-GW-092518				900				3				X				X												02
3	MW10S-GW-092518				930				3				X				X												03
4	MW12S-GW-092518				945				3				X				X												04
5	MW7S-GW-092518				1015				3				X				X												005
6	MW1S-GW-092518				1030				3				X				X												006
7	MW8S-GW-092518				1100				3				X				X												007
8	MW9S-GW-092518				1130				3				X				X												008
9	FD1-092518				700				3				X				X												009
10	FD2-092518				730				3				X				X												010
11	FB-092518			9/25	700				3				X				X												011
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are **in bold**	Jonathan [signature] / Jacobs	9/25/18	1500	[signature] / Pace	9/26/18	1120	2.1	Y	Y	Y
*Field filtered by client							2.6	Y	Y	Y
							2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/25/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449082

PM: JMG Due Date: 10/10/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7785 4461 / 4483 / 4472

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.9, 2.4, 1.8 **Cooler Temp Corrected (°C):** 2.1, 2.6, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** BV 9/26/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12. Sample FB-092518 did not arrive
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. See exception sheet
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Brad - notified that sample FB-092518 did not arrive.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		Corrected Temp:
Opened Time: 1330	Temp: Cooler	
Time: 1350	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 09/28/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce ...] his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Label by: JJ

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
MW10S-GW-092718	0	1	2	3
MW12S-GW-092718	0	1	2	3
MW7S-GW-092718	0	2	1	3
MW1S-GW-092518	0	1	2	3
FD2-092718	0	1	2	3

Pace Analytical Services, LLC
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October 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449089

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449089001	**MW6s-GW-092518**	Water	09/25/18 08:15	09/26/18 11:20
10449089002	**MW11s-GW-092518**	Water	09/25/18 09:00	09/26/18 11:20
10449089003	**MW10s-GW-092518**	Water	09/25/18 09:30	09/26/18 11:20
10449089004	**MW12s-GW-092518**	Water	09/25/18 09:45	09/26/18 11:20
10449089005	**MW7s-GW-092518**	Water	09/25/18 10:15	09/26/18 11:20
10449089006	**MW1s-GW-092518**	Water	09/25/18 10:30	09/26/18 11:20
10449089007	**MW8s-GW-092518**	Water	09/25/18 11:00	09/26/18 11:20
10449089008	**MW9s-GW-092518**	Water	09/25/18 11:30	09/26/18 11:20
10449089009	**FD1-092518**	Water	09/25/18 07:00	09/26/18 11:20
10449089010	**FD2-092518**	Water	09/25/18 07:30	09/26/18 11:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449089001	**MW6s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089002	**MW11s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089003	**MW10s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089004	**MW12s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089005	**MW7s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089006	**MW1s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089007	**MW8s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089008	**MW9s-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089009	**FD1-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449089010	**FD2-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449089001	**MW6s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	20.0J	ug/L	200	10/03/18 15:58	
EPA 6010D	Barium, Dissolved	30.2	ug/L	10.0	10/03/18 15:58	
EPA 6010D	Beryllium, Dissolved	0.20J	ug/L	5.0	10/03/18 15:58	
EPA 6010D	Cadmium, Dissolved	0.26J	ug/L	3.0	10/03/18 15:58	
EPA 6010D	Calcium, Dissolved	34200	ug/L	500	10/03/18 15:58	
EPA 6010D	Iron, Dissolved	22.8J	ug/L	50.0	10/03/18 15:58	
EPA 6010D	Magnesium, Dissolved	10100	ug/L	500	10/03/18 15:58	
EPA 6010D	Manganese, Dissolved	1.6J	ug/L	5.0	10/03/18 15:58	
EPA 6010D	Potassium, Dissolved	493J	ug/L	2500	10/03/18 15:58	
EPA 6010D	Sodium, Dissolved	11000	ug/L	1000	10/03/18 15:58	
EPA 6010D	Vanadium, Dissolved	4.1J	ug/L	15.0	10/03/18 15:58	
EPA 6010D	Zinc, Dissolved	7.6J	ug/L	20.0	10/03/18 15:58	
SM 2320B	Alkalinity, Total as CaCO3	146	mg/L	5.0	10/08/18 08:49	
SM 2540C	Total Dissolved Solids	201	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	1.5	mg/L	1.2	09/26/18 17:01	
EPA 300.0	Nitrate as N	0.21	mg/L	0.10	09/26/18 17:01	
EPA 300.0	Sulfate	1.6	mg/L	1.2	09/26/18 17:01	
EPA 353.2	Nitrogen, NO2 plus NO3	0.18	mg/L	0.10	09/27/18 11:56	
EPA 410.4	Chemical Oxygen Demand	17.5J	mg/L	50.0	10/09/18 10:15	
SM 5310C	Total Organic Carbon	1.8	mg/L	1.0	09/28/18 14:39	
10449089002	**MW11s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	97.2J	ug/L	200	10/03/18 16:13	
EPA 6010D	Barium, Dissolved	44.0	ug/L	10.0	10/03/18 16:13	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	10/03/18 16:13	
EPA 6010D	Calcium, Dissolved	46200	ug/L	500	10/03/18 16:13	
EPA 6010D	Iron, Dissolved	131	ug/L	50.0	10/03/18 16:13	
EPA 6010D	Magnesium, Dissolved	13400	ug/L	500	10/03/18 16:13	
EPA 6010D	Manganese, Dissolved	13.5	ug/L	5.0	10/03/18 16:13	
EPA 6010D	Potassium, Dissolved	715J	ug/L	2500	10/03/18 16:13	
EPA 6010D	Sodium, Dissolved	18400	ug/L	1000	10/03/18 16:13	
EPA 6010D	Vanadium, Dissolved	6.6J	ug/L	15.0	10/03/18 16:13	
EPA 6010D	Zinc, Dissolved	6.9J	ug/L	20.0	10/03/18 16:13	
SM 2320B	Alkalinity, Total as CaCO3	213	mg/L	5.0	10/08/18 08:52	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	1.1J	mg/L	1.2	09/26/18 18:06	
EPA 300.0	Nitrate as N	0.078J	mg/L	0.10	09/26/18 18:06	
EPA 300.0	Sulfate	2.9	mg/L	1.2	09/26/18 18:06	
EPA 353.2	Nitrogen, NO2 plus NO3	0.062J	mg/L	0.10	09/27/18 12:02	
SM 5310C	Total Organic Carbon	0.95J	mg/L	1.0	09/28/18 14:52	
10449089003	**MW10s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	43.0J	ug/L	200	10/03/18 16:15	
EPA 6010D	Barium, Dissolved	42.1	ug/L	10.0	10/03/18 16:15	
EPA 6010D	Calcium, Dissolved	73200	ug/L	500	10/03/18 16:15	
EPA 6010D	Cobalt, Dissolved	0.68J	ug/L	10.0	10/03/18 16:15	
EPA 6010D	Copper, Dissolved	4.4J	ug/L	10.0	10/03/18 16:15	
EPA 6010D	Iron, Dissolved	31.1J	ug/L	50.0	10/03/18 16:15	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449089003	**MW10s-GW-092518**					
EPA 6010D	Magnesium, Dissolved	20900	ug/L	500	10/03/18 16:15	
EPA 6010D	Manganese, Dissolved	20.6	ug/L	5.0	10/03/18 16:15	
EPA 6010D	Potassium, Dissolved	372J	ug/L	2500	10/03/18 16:15	
EPA 6010D	Sodium, Dissolved	13200	ug/L	1000	10/03/18 16:15	
EPA 6010D	Vanadium, Dissolved	3.2J	ug/L	15.0	10/03/18 16:15	
EPA 6010D	Zinc, Dissolved	4.5J	ug/L	20.0	10/03/18 16:15	
SM 2320B	Alkalinity, Total as CaCO3	309	mg/L	5.0	10/08/18 08:56	
SM 2540C	Total Dissolved Solids	330	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	0.74J	mg/L	1.2	09/26/18 19:10	
EPA 300.0	Nitrate as N	0.18	mg/L	0.10	09/26/18 19:10	
EPA 300.0	Sulfate	1.8	mg/L	1.2	09/26/18 19:10	
EPA 353.2	Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	09/27/18 12:03	
SM 5310C	Total Organic Carbon	2.1	mg/L	2.0	10/01/18 09:31	
10449089004	**MW12s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	16.0J	ug/L	200	10/03/18 16:17	
EPA 6010D	Barium, Dissolved	158	ug/L	10.0	10/03/18 16:17	
EPA 6010D	Calcium, Dissolved	72000	ug/L	500	10/03/18 16:17	
EPA 6010D	Magnesium, Dissolved	21500	ug/L	500	10/03/18 16:17	
EPA 6010D	Manganese, Dissolved	4.2J	ug/L	5.0	10/03/18 16:17	
EPA 6010D	Nickel, Dissolved	1.2J	ug/L	20.0	10/03/18 16:17	
EPA 6010D	Potassium, Dissolved	580J	ug/L	2500	10/03/18 16:17	
EPA 6010D	Sodium, Dissolved	32800	ug/L	1000	10/03/18 16:17	
EPA 6010D	Vanadium, Dissolved	3.2J	ug/L	15.0	10/03/18 16:17	
EPA 6010D	Zinc, Dissolved	5.0J	ug/L	20.0	10/03/18 16:17	
SM 2320B	Alkalinity, Total as CaCO3	248	mg/L	5.0	10/08/18 09:00	
SM 2540C	Total Dissolved Solids	467	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	43.3	mg/L	1.2	09/26/18 19:25	
EPA 300.0	Nitrate as N	7.4	mg/L	0.10	09/26/18 19:25	
EPA 300.0	Sulfate	42.8	mg/L	1.2	09/26/18 19:25	
EPA 353.2	Nitrogen, NO2 plus NO3	7.1	mg/L	0.50	09/27/18 12:57	
EPA 410.4	Chemical Oxygen Demand	21.9J	mg/L	50.0	10/09/18 10:15	
SM 5310C	Total Organic Carbon	3.1	mg/L	1.0	09/28/18 15:45	
10449089005	**MW7s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	484	ug/L	200	10/03/18 16:18	
EPA 6010D	Barium, Dissolved	23.8	ug/L	10.0	10/03/18 16:18	
EPA 6010D	Calcium, Dissolved	33500	ug/L	500	10/03/18 16:18	
EPA 6010D	Iron, Dissolved	762	ug/L	50.0	10/03/18 16:18	
EPA 6010D	Lead, Dissolved	3.3J	ug/L	10.0	10/03/18 16:18	
EPA 6010D	Magnesium, Dissolved	8790	ug/L	500	10/03/18 16:18	
EPA 6010D	Manganese, Dissolved	14.0	ug/L	5.0	10/03/18 16:18	
EPA 6010D	Potassium, Dissolved	700J	ug/L	2500	10/03/18 16:18	
EPA 6010D	Sodium, Dissolved	9830	ug/L	1000	10/03/18 16:18	
EPA 6010D	Vanadium, Dissolved	2.8J	ug/L	15.0	10/03/18 16:18	
EPA 6010D	Zinc, Dissolved	19.4J	ug/L	20.0	10/03/18 16:18	
SM 2320B	Alkalinity, Total as CaCO3	82.9	mg/L	5.0	10/08/18 09:04	
SM 2540C	Total Dissolved Solids	202	mg/L	10.0	10/01/18 14:49	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449089005	**MW7s-GW-092518**					
EPA 300.0	Chloride	9.3	mg/L	1.2	09/26/18 19:40	
EPA 300.0	Nitrate as N	8.5	mg/L	0.20	09/26/18 22:24	
EPA 300.0	Sulfate	18.5	mg/L	1.2	09/26/18 19:40	
EPA 353.2	Nitrogen, NO2 plus NO3	7.6	mg/L	0.50	09/27/18 12:58	
EPA 410.4	Chemical Oxygen Demand	24.2J	mg/L	50.0	10/09/18 10:16	
SM 5310C	Total Organic Carbon	1.9	mg/L	1.0	09/28/18 15:59	
10449089006	**MW1s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	197J	ug/L	200	10/03/18 16:20	
EPA 6010D	Barium, Dissolved	233	ug/L	10.0	10/03/18 16:20	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	10/03/18 16:20	
EPA 6010D	Calcium, Dissolved	118000	ug/L	500	10/03/18 16:20	
EPA 6010D	Copper, Dissolved	1.4J	ug/L	10.0	10/03/18 16:20	
EPA 6010D	Iron, Dissolved	154	ug/L	50.0	10/03/18 16:20	
EPA 6010D	Lead, Dissolved	4.6J	ug/L	10.0	10/03/18 16:20	
EPA 6010D	Magnesium, Dissolved	32000	ug/L	500	10/03/18 16:20	
EPA 6010D	Manganese, Dissolved	6.7	ug/L	5.0	10/03/18 16:20	
EPA 6010D	Potassium, Dissolved	441J	ug/L	2500	10/03/18 16:20	
EPA 6010D	Silver, Dissolved	0.41J	ug/L	10.0	10/03/18 16:20	
EPA 6010D	Sodium, Dissolved	39100	ug/L	1000	10/03/18 16:20	
EPA 6010D	Vanadium, Dissolved	9.7J	ug/L	15.0	10/03/18 16:20	
EPA 6010D	Zinc, Dissolved	11.0J	ug/L	20.0	10/03/18 16:20	
SM 2320B	Alkalinity, Total as CaCO3	464	mg/L	5.0	10/08/18 09:07	
SM 2540C	Total Dissolved Solids	528	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	8.0	mg/L	1.2	09/26/18 20:26	
EPA 300.0	Nitrate as N	0.081J	mg/L	0.10	09/26/18 20:26	
EPA 300.0	Sulfate	24.0	mg/L	1.2	09/26/18 20:26	
EPA 353.2	Nitrogen, NO2 plus NO3	0.059J	mg/L	0.10	09/27/18 12:07	
SM 5310C	Total Organic Carbon	4.0	mg/L	1.0	09/28/18 16:12	
10449089007	**MW8s-GW-092518**					
EPA 6010D	Aluminum, Dissolved	29.2J	ug/L	200	10/03/18 16:21	
EPA 6010D	Barium, Dissolved	33.2	ug/L	10.0	10/03/18 16:21	
EPA 6010D	Calcium, Dissolved	42300	ug/L	500	10/03/18 16:21	
EPA 6010D	Copper, Dissolved	3.3J	ug/L	10.0	10/03/18 16:21	
EPA 6010D	Iron, Dissolved	61.2	ug/L	50.0	10/03/18 16:21	
EPA 6010D	Magnesium, Dissolved	10600	ug/L	500	10/03/18 16:21	
EPA 6010D	Manganese, Dissolved	31.0	ug/L	5.0	10/03/18 16:21	
EPA 6010D	Potassium, Dissolved	402J	ug/L	2500	10/03/18 16:21	
EPA 6010D	Sodium, Dissolved	11300	ug/L	1000	10/03/18 16:21	
EPA 6010D	Vanadium, Dissolved	1.1J	ug/L	15.0	10/03/18 16:21	
EPA 6010D	Zinc, Dissolved	11.9J	ug/L	20.0	10/03/18 16:21	
SM 2320B	Alkalinity, Total as CaCO3	130	mg/L	5.0	10/08/18 09:11	
SM 2540C	Total Dissolved Solids	275	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	4.3	mg/L	1.2	09/26/18 20:41	
EPA 300.0	Nitrate as N	8.1	mg/L	0.20	09/26/18 22:43	
EPA 300.0	Sulfate	21.8	mg/L	1.2	09/26/18 20:41	
EPA 353.2	Nitrogen, NO2 plus NO3	8.0	mg/L	0.50	09/27/18 12:59	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449089007	**MW8s-GW-092518**					
SM 5310C	Total Organic Carbon	1.8	mg/L	1.0	09/28/18 16:25	
10449089008	**MW9s-GW-092518**					
EPA 6010D	Barium, Dissolved	65.5	ug/L	10.0	10/03/18 16:23	
EPA 6010D	Cadmium, Dissolved	0.88J	ug/L	3.0	10/03/18 16:23	
EPA 6010D	Calcium, Dissolved	67000	ug/L	500	10/03/18 16:23	
EPA 6010D	Cobalt, Dissolved	1.6J	ug/L	10.0	10/03/18 16:23	
EPA 6010D	Iron, Dissolved	7.4J	ug/L	50.0	10/03/18 16:23	
EPA 6010D	Magnesium, Dissolved	15200	ug/L	500	10/03/18 16:23	
EPA 6010D	Manganese, Dissolved	25.7	ug/L	5.0	10/03/18 16:23	
EPA 6010D	Nickel, Dissolved	1.2J	ug/L	20.0	10/03/18 16:23	
EPA 6010D	Potassium, Dissolved	1420J	ug/L	2500	10/03/18 16:23	
EPA 6010D	Sodium, Dissolved	14500	ug/L	1000	10/03/18 16:23	
EPA 6010D	Vanadium, Dissolved	0.85J	ug/L	15.0	10/03/18 16:23	
EPA 6010D	Zinc, Dissolved	25.2	ug/L	20.0	10/03/18 16:23	
SM 2320B	Alkalinity, Total as CaCO3	83.2	mg/L	5.0	10/08/18 09:14	
SM 2540C	Total Dissolved Solids	420	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	44.9	mg/L	1.2	09/26/18 20:56	
EPA 300.0	Nitrate as N	15.0	mg/L	0.50	09/26/18 23:00	
EPA 300.0	Sulfate	76.5	mg/L	1.2	09/26/18 20:56	
EPA 353.2	Nitrogen, NO2 plus NO3	12.7	mg/L	1.0	09/27/18 13:00	
SM 5310C	Total Organic Carbon	1.9	mg/L	1.0	09/28/18 16:38	
10449089009	**FD1-092518**					
EPA 6010D	Aluminum, Dissolved	37.9J	ug/L	200	10/03/18 16:25	
EPA 6010D	Barium, Dissolved	28.9	ug/L	10.0	10/03/18 16:25	
EPA 6010D	Calcium, Dissolved	32500	ug/L	500	10/03/18 16:25	
EPA 6010D	Iron, Dissolved	36.2J	ug/L	50.0	10/03/18 16:25	
EPA 6010D	Magnesium, Dissolved	9620	ug/L	500	10/03/18 16:25	
EPA 6010D	Manganese, Dissolved	0.89J	ug/L	5.0	10/03/18 16:25	
EPA 6010D	Potassium, Dissolved	459J	ug/L	2500	10/03/18 16:25	
EPA 6010D	Sodium, Dissolved	10400	ug/L	1000	10/03/18 16:25	
EPA 6010D	Vanadium, Dissolved	3.8J	ug/L	15.0	10/03/18 16:25	
EPA 6010D	Zinc, Dissolved	6.9J	ug/L	20.0	10/03/18 16:25	
SM 2320B	Alkalinity, Total as CaCO3	148	mg/L	5.0	10/08/18 09:58	
SM 2540C	Total Dissolved Solids	206	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	1.5	mg/L	1.2	09/26/18 21:11	
EPA 300.0	Nitrate as N	0.19	mg/L	0.10	09/26/18 21:11	
EPA 300.0	Sulfate	1.6	mg/L	1.2	09/26/18 21:11	
EPA 353.2	Nitrogen, NO2 plus NO3	0.18	mg/L	0.10	09/27/18 12:10	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	09/28/18 16:51	
10449089010	**FD2-092518**					
EPA 6010D	Barium, Dissolved	59.5	ug/L	10.0	10/03/18 16:26	
EPA 6010D	Calcium, Dissolved	61100	ug/L	500	10/03/18 16:26	
EPA 6010D	Iron, Dissolved	10.8J	ug/L	50.0	10/03/18 16:26	
EPA 6010D	Magnesium, Dissolved	13800	ug/L	500	10/03/18 16:26	
EPA 6010D	Manganese, Dissolved	20.2	ug/L	5.0	10/03/18 16:26	
EPA 6010D	Potassium, Dissolved	1250J	ug/L	2500	10/03/18 16:26	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449089010	**FD2-092518**					
EPA 6010D	Sodium, Dissolved	12900	ug/L	1000	10/03/18 16:26	
EPA 6010D	Vanadium, Dissolved	0.85J	ug/L	15.0	10/03/18 16:26	
EPA 6010D	Zinc, Dissolved	22.0	ug/L	20.0	10/03/18 16:26	
SM 2320B	Alkalinity, Total as CaCO3	81.7	mg/L	5.0	10/08/18 10:02	
SM 2540C	Total Dissolved Solids	381	mg/L	10.0	10/01/18 14:49	
EPA 300.0	Chloride	48.4	mg/L	1.2	09/26/18 21:26	
EPA 300.0	Nitrate as N	14.2	mg/L	0.50	09/27/18 10:18	H5
EPA 300.0	Sulfate	69.0	mg/L	1.2	09/26/18 21:26	
EPA 353.2	Nitrogen, NO2 plus NO3	13.3	mg/L	1.0	09/27/18 13:02	
EPA 410.4	Chemical Oxygen Demand	25.9J	mg/L	50.0	10/09/18 10:17	
SM 5310C	Total Organic Carbon	1.9	mg/L	1.0	09/28/18 17:04	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 565635

R1: RPD value was outside control limits.
- DUP (Lab ID: 3069113)
  - Methane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 121949

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 525790)
  - Sulfide, Total
- MS (Lab ID: 525792)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H5: Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
- FD2-092518 (Lab ID: 10449089010)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 567809

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449033001,10449033002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3081645)
  - Chemical Oxygen Demand
- MS (Lab ID: 3081647)
  - Chemical Oxygen Demand
- MSD (Lab ID: 3081646)
  - Chemical Oxygen Demand

R1: RPD value was outside control limits.

- MSD (Lab ID: 3081648)
  - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
10 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW6s-GW-092518 **Lab ID: 10449089001** Collected: 09/25/18 08:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 10:19	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 10:19	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 10:19	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**20.0J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 15:58	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 15:58	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 15:58	7440-38-2	
Barium, Dissolved	**30.2**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 15:58	7440-39-3	
Beryllium, Dissolved	**0.20J**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 15:58	7440-41-7	
Cadmium, Dissolved	**0.26J**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 15:58	7440-43-9	
Calcium, Dissolved	**34200**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 15:58	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 15:58	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 15:58	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 15:58	7440-50-8	
Iron, Dissolved	**22.8J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 15:58	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 15:58	7439-92-1	
Magnesium, Dissolved	**10100**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 15:58	7439-95-4	
Manganese, Dissolved	**1.6J**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 15:58	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 15:58	7440-02-0	
Potassium, Dissolved	**493J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 15:58	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 15:58	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 15:58	7440-22-4	
Sodium, Dissolved	**11000**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 15:58	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 15:58	7440-28-0	
Vanadium, Dissolved	**4.1J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 15:58	7440-62-2	
Zinc, Dissolved	**7.6J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 15:58	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:34	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**146**	mg/L	5.0	1.0	1		10/08/18 08:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**201**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:05	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.28	1		09/26/18 17:01	16887-00-6	
Nitrate as N	**0.21**	mg/L	0.10	0.015	1		09/26/18 17:01	14797-55-8	
Sulfate	**1.6**	mg/L	1.2	0.19	1		09/26/18 17:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW6s-GW-092518 **Lab ID: 10449089001** Collected: 09/25/18 08:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.18**	mg/L	0.10	0.018	1		09/27/18 11:56		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**17.5J**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:15		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.20	1		09/28/18 14:39	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW11s-GW-092518 **Lab ID: 10449089002** Collected: 09/25/18 09:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 10:26	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 10:26	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 10:26	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**97.2J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:13	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:13	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:13	7440-38-2	
Barium, Dissolved	**44.0**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:13	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:13	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:13	7440-43-9	
Calcium, Dissolved	**46200**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:13	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:13	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:13	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:13	7440-50-8	
Iron, Dissolved	**131**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:13	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:13	7439-92-1	
Magnesium, Dissolved	**13400**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:13	7439-95-4	
Manganese, Dissolved	**13.5**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:13	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:13	7440-02-0	
Potassium, Dissolved	**715J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:13	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:13	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:13	7440-22-4	
Sodium, Dissolved	**18400**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:13	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:13	7440-28-0	
Vanadium, Dissolved	**6.6J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:13	7440-62-2	
Zinc, Dissolved	**6.9J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:13	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:36	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**213**	mg/L	5.0	1.0	1		10/08/18 08:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**240**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:07	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.1J**	mg/L	1.2	0.28	1		09/26/18 18:06	16887-00-6	
Nitrate as N	**0.078J**	mg/L	0.10	0.015	1		09/26/18 18:06	14797-55-8	
Sulfate	**2.9**	mg/L	1.2	0.19	1		09/26/18 18:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW11s-GW-092518 **Lab ID: 10449089002** Collected: 09/25/18 09:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.062J**	mg/L	0.10	0.018	1		09/27/18 12:02		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:15		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.95J**	mg/L	1.0	0.20	1		09/28/18 14:52	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW10s-GW-092518 **Lab ID: 10449089003** Collected: 09/25/18 09:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 10:33	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 10:33	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 10:33	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**43.0J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:15	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:15	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:15	7440-38-2	
Barium, Dissolved	**42.1**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:15	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:15	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:15	7440-43-9	
Calcium, Dissolved	**73200**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:15	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:15	7440-47-3	
Cobalt, Dissolved	**0.68J**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:15	7440-48-4	
Copper, Dissolved	**4.4J**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:15	7440-50-8	
Iron, Dissolved	**31.1J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:15	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:15	7439-92-1	
Magnesium, Dissolved	**20900**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:15	7439-95-4	
Manganese, Dissolved	**20.6**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:15	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:15	7440-02-0	
Potassium, Dissolved	**372J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:15	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:15	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:15	7440-22-4	
Sodium, Dissolved	**13200**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:15	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:15	7440-28-0	
Vanadium, Dissolved	**3.2J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:15	7440-62-2	
Zinc, Dissolved	**4.5J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:15	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:42	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**309**	mg/L	5.0	1.0	1		10/08/18 08:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**330**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**0.74J**	mg/L	1.2	0.28	1		09/26/18 19:10	16887-00-6	
Nitrate as N	**0.18**	mg/L	0.10	0.015	1		09/26/18 19:10	14797-55-8	
Sulfate	**1.8**	mg/L	1.2	0.19	1		09/26/18 19:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW10s-GW-092518 **Lab ID: 10449089003** Collected: 09/25/18 09:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.19**	mg/L	0.10	0.018	1		09/27/18 12:03		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:15		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.1**	mg/L	2.0	0.40	2		10/01/18 09:31	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW12s-GW-092518 **Lab ID: 10449089004** Collected: 09/25/18 09:45 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:00	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:00	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:00	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**16.0J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:17	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:17	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:17	7440-38-2	
Barium, Dissolved	**158**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:17	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:17	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:17	7440-43-9	
Calcium, Dissolved	**72000**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:17	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:17	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:17	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:17	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:17	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:17	7439-92-1	
Magnesium, Dissolved	**21500**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:17	7439-95-4	
Manganese, Dissolved	**4.2J**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:17	7439-96-5	
Nickel, Dissolved	**1.2J**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:17	7440-02-0	
Potassium, Dissolved	**580J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:17	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:17	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:17	7440-22-4	
Sodium, Dissolved	**32800**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:17	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:17	7440-28-0	
Vanadium, Dissolved	**3.2J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:17	7440-62-2	
Zinc, Dissolved	**5.0J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:17	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:44	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**248**	mg/L	5.0	1.0	1		10/08/18 09:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**467**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:09	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**43.3**	mg/L	1.2	0.28	1		09/26/18 19:25	16887-00-6	
Nitrate as N	**7.4**	mg/L	0.10	0.015	1		09/26/18 19:25	14797-55-8	
Sulfate	**42.8**	mg/L	1.2	0.19	1		09/26/18 19:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW12s-GW-092518 **Lab ID: 10449089004** Collected: 09/25/18 09:45 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**7.1**	mg/L	0.50	0.088	5		09/27/18 12:57		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**21.9J**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:15		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.1**	mg/L	1.0	0.20	1		09/28/18 15:45	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW7s-GW-092518 **Lab ID: 10449089005** Collected: 09/25/18 10:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:07	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:07	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:07	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**484**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:18	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:18	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:18	7440-38-2	
Barium, Dissolved	**23.8**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:18	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:18	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:18	7440-43-9	
Calcium, Dissolved	**33500**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:18	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:18	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:18	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:18	7440-50-8	
Iron, Dissolved	**762**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:18	7439-89-6	
Lead, Dissolved	**3.3J**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:18	7439-92-1	
Magnesium, Dissolved	**8790**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:18	7439-95-4	
Manganese, Dissolved	**14.0**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:18	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:18	7440-02-0	
Potassium, Dissolved	**700J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:18	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:18	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:18	7440-22-4	
Sodium, Dissolved	**9830**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:18	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:18	7440-28-0	
Vanadium, Dissolved	**2.8J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:18	7440-62-2	
Zinc, Dissolved	**19.4J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:18	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:50	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**82.9**	mg/L	5.0	1.0	1		10/08/18 09:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**202**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**9.3**	mg/L	1.2	0.28	1		09/26/18 19:40	16887-00-6	
Nitrate as N	**8.5**	mg/L	0.20	0.029	2		09/26/18 22:24	14797-55-8	
Sulfate	**18.5**	mg/L	1.2	0.19	1		09/26/18 19:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW7s-GW-092518 **Lab ID: 10449089005** Collected: 09/25/18 10:15 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**7.6**	mg/L	0.50	0.088	5		09/27/18 12:58		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**24.2J**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.9**	mg/L	1.0	0.20	1		09/28/18 15:59	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW1s-GW-092518 **Lab ID: 10449089006** Collected: 09/25/18 10:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:15	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:15	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:15	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**197J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:20	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:20	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:20	7440-38-2	
Barium, Dissolved	**233**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:20	7440-39-3	
Beryllium, Dissolved	**0.19J**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:20	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:20	7440-43-9	
Calcium, Dissolved	**118000**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:20	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:20	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:20	7440-48-4	
Copper, Dissolved	**1.4J**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:20	7440-50-8	
Iron, Dissolved	**154**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:20	7439-89-6	
Lead, Dissolved	**4.6J**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:20	7439-92-1	
Magnesium, Dissolved	**32000**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:20	7439-95-4	
Manganese, Dissolved	**6.7**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:20	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:20	7440-02-0	
Potassium, Dissolved	**441J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:20	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:20	7782-49-2	
Silver, Dissolved	**0.41J**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:20	7440-22-4	
Sodium, Dissolved	**39100**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:20	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:20	7440-28-0	
Vanadium, Dissolved	**9.7J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:20	7440-62-2	
Zinc, Dissolved	**11.0J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:20	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:52	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**464**	mg/L	5.0	1.0	1		10/08/18 09:07		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**528**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:29	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**8.0**	mg/L	1.2	0.28	1		09/26/18 20:26	16887-00-6	
Nitrate as N	**0.081J**	mg/L	0.10	0.015	1		09/26/18 20:26	14797-55-8	
Sulfate	**24.0**	mg/L	1.2	0.19	1		09/26/18 20:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW1s-GW-092518 **Lab ID: 10449089006** Collected: 09/25/18 10:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.059J**	mg/L	0.10	0.018	1		09/27/18 12:07		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**4.0**	mg/L	1.0	0.20	1		09/28/18 16:12	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW8s-GW-092518 **Lab ID: 10449089007** Collected: 09/25/18 11:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:22	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:22	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:22	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**29.2J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:21	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:21	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:21	7440-38-2	
Barium, Dissolved	**33.2**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:21	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:21	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:21	7440-43-9	
Calcium, Dissolved	**42300**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:21	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:21	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:21	7440-48-4	
Copper, Dissolved	**3.3J**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:21	7440-50-8	
Iron, Dissolved	**61.2**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:21	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:21	7439-92-1	
Magnesium, Dissolved	**10600**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:21	7439-95-4	
Manganese, Dissolved	**31.0**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:21	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:21	7440-02-0	
Potassium, Dissolved	**402J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:21	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:21	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:21	7440-22-4	
Sodium, Dissolved	**11300**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:21	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:21	7440-28-0	
Vanadium, Dissolved	**1.1J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:21	7440-62-2	
Zinc, Dissolved	**11.9J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:21	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:54	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**130**	mg/L	5.0	1.0	1		10/08/18 09:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**275**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:31	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.3**	mg/L	1.2	0.28	1		09/26/18 20:41	16887-00-6	
Nitrate as N	**8.1**	mg/L	0.20	0.029	2		09/26/18 22:43	14797-55-8	
Sulfate	**21.8**	mg/L	1.2	0.19	1		09/26/18 20:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW8s-GW-092518 **Lab ID: 10449089007** Collected: 09/25/18 11:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**8.0**	mg/L	0.50	0.088	5		09/27/18 12:59		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.20	1		09/28/18 16:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW9s-GW-092518 **Lab ID: 10449089008** Collected: 09/25/18 11:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:29	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:23	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:23	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:23	7440-38-2	
Barium, Dissolved	**65.5**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:23	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:23	7440-41-7	
Cadmium, Dissolved	**0.88J**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:23	7440-43-9	
Calcium, Dissolved	**67000**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:23	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:23	7440-47-3	
Cobalt, Dissolved	**1.6J**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:23	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:23	7440-50-8	
Iron, Dissolved	**7.4J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:23	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:23	7439-92-1	
Magnesium, Dissolved	**15200**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:23	7439-95-4	
Manganese, Dissolved	**25.7**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:23	7439-96-5	
Nickel, Dissolved	**1.2J**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:23	7440-02-0	
Potassium, Dissolved	**1420J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:23	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:23	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:23	7440-22-4	
Sodium, Dissolved	**14500**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:23	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:23	7440-28-0	
Vanadium, Dissolved	**0.85J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:23	7440-62-2	
Zinc, Dissolved	**25.2**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:23	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:57	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**83.2**	mg/L	5.0	1.0	1		10/08/18 09:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**420**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:35	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**44.9**	mg/L	1.2	0.28	1		09/26/18 20:56	16887-00-6	
Nitrate as N	**15.0**	mg/L	0.50	0.073	5		09/26/18 23:00	14797-55-8	
Sulfate	**76.5**	mg/L	1.2	0.19	1		09/26/18 20:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: MW9s-GW-092518 **Lab ID: 10449089008** Collected: 09/25/18 11:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**12.7**	mg/L	1.0	0.18	10		09/27/18 13:00		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:16		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.9**	mg/L	1.0	0.20	1		09/28/18 16:38	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: FD1-092518 **Lab ID: 10449089009** Collected: 09/25/18 07:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:36	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**37.9J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:25	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:25	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:25	7440-38-2	
Barium, Dissolved	**28.9**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:25	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:25	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:25	7440-43-9	
Calcium, Dissolved	**32500**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:25	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:25	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:25	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:25	7440-50-8	
Iron, Dissolved	**36.2J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:25	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:25	7439-92-1	
Magnesium, Dissolved	**9620**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:25	7439-95-4	
Manganese, Dissolved	**0.89J**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:25	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:25	7440-02-0	
Potassium, Dissolved	**459J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:25	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:25	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:25	7440-22-4	
Sodium, Dissolved	**10400**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:25	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:25	7440-28-0	
Vanadium, Dissolved	**3.8J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:25	7440-62-2	
Zinc, Dissolved	**6.9J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:25	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 16:59	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**148**	mg/L	5.0	1.0	1		10/08/18 09:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**206**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:36	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.28	1		09/26/18 21:11	16887-00-6	
Nitrate as N	**0.19**	mg/L	0.10	0.015	1		09/26/18 21:11	14797-55-8	
Sulfate	**1.6**	mg/L	1.2	0.19	1		09/26/18 21:11	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: FD1-092518 **Lab ID: 10449089009** Collected: 09/25/18 07:00 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.18**	mg/L	0.10	0.018	1		09/27/18 12:10		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:17		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.20	1		09/28/18 16:51	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: FD2-092518 **Lab ID: 10449089010** Collected: 09/25/18 07:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 11:43	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 11:43	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 11:43	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:26	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:26	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:26	7440-38-2	
Barium, Dissolved	**59.5**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:26	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:26	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:26	7440-43-9	
Calcium, Dissolved	**61100**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:26	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:26	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:26	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:26	7440-50-8	
Iron, Dissolved	**10.8J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:26	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:26	7439-92-1	
Magnesium, Dissolved	**13800**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:26	7439-95-4	
Manganese, Dissolved	**20.2**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:26	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:26	7440-02-0	
Potassium, Dissolved	**1250J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:26	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:26	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:26	7440-22-4	
Sodium, Dissolved	**12900**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:26	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:26	7440-28-0	
Vanadium, Dissolved	**0.85J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:26	7440-62-2	
Zinc, Dissolved	**22.0**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:26	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 17:01	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**81.7**	mg/L	5.0	1.0	1		10/08/18 10:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**381**	mg/L	10.0	5.0	1		10/01/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:37	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**48.4**	mg/L	1.2	0.28	1		09/26/18 21:26	16887-00-6	
Nitrate as N	**14.2**	mg/L	0.50	0.073	5		09/27/18 10:18	14797-55-8	H5
Sulfate	**69.0**	mg/L	1.2	0.19	1		09/26/18 21:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Sample: FD2-092518 **Lab ID: 10449089010** Collected: 09/25/18 07:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**13.3**	mg/L	1.0	0.18	10		09/27/18 13:02		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**25.9J**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:17		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.9**	mg/L	1.0	0.20	1		09/28/18 17:04	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 565635 — Analysis Method: RSK 175
QC Batch Method: RSK 175 — Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3069110 — Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	09/27/18 09:11	
Ethene	ug/L	<2.9	10.0	2.9	09/27/18 09:11	
Methane	ug/L	<4.9	10.0	4.9	09/27/18 09:11	

LABORATORY CONTROL SAMPLE & LCSD: 3069111 3069112

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	114	115	101	101	85-115	1	20	
Ethene	ug/L	106	109	109	103	102	85-115	0	20	
Methane	ug/L	60.7	62.0	62.7	102	103	85-115	1	20	

SAMPLE DUPLICATE: 3069113

Parameter	Units	10448808001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<10.0	<3.0		20	
Ethene	ug/L	<10.0	<2.9		20	
Methane	ug/L	159	114	33	20	R1

SAMPLE DUPLICATE: 3069114

Parameter	Units	10449089010 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 565915 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3070847 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	10/05/18 16:30	

LABORATORY CONTROL SAMPLE: 3070848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070849 3070850

Parameter	Units	10449089002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.2	5.2	104	103	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 565913 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3070839 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	10/03/18 15:54	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	10/03/18 15:54	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	10/03/18 15:54	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	10/03/18 15:54	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	10/03/18 15:54	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	10/03/18 15:54	
Calcium, Dissolved	ug/L	16.3J	500	13.9	10/03/18 15:54	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	10/03/18 15:54	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	10/03/18 15:54	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	10/03/18 15:54	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	10/03/18 15:54	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	10/03/18 15:54	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	10/03/18 15:54	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	10/03/18 15:54	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	10/03/18 15:54	
Potassium, Dissolved	ug/L	<310	2500	310	10/03/18 15:54	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	10/03/18 15:54	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	10/03/18 15:54	
Sodium, Dissolved	ug/L	87.6J	1000	21.5	10/03/18 15:54	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	10/03/18 15:54	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	10/03/18 15:54	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	10/03/18 15:54	

LABORATORY CONTROL SAMPLE: 3070840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19900	100	80-120	
Antimony, Dissolved	ug/L	1000	941	94	80-120	
Arsenic, Dissolved	ug/L	1000	921	92	80-120	
Barium, Dissolved	ug/L	1000	945	95	80-120	
Beryllium, Dissolved	ug/L	1000	955	95	80-120	
Cadmium, Dissolved	ug/L	1000	944	94	80-120	
Calcium, Dissolved	ug/L	20000	18700	93	80-120	
Chromium, Dissolved	ug/L	1000	926	93	80-120	
Cobalt, Dissolved	ug/L	1000	952	95	80-120	
Copper, Dissolved	ug/L	1000	934	93	80-120	
Iron, Dissolved	ug/L	20000	18600	93	80-120	
Lead, Dissolved	ug/L	1000	955	95	80-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

LABORATORY CONTROL SAMPLE: 3070840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19100	96	80-120	
Manganese, Dissolved	ug/L	1000	959	96	80-120	
Nickel, Dissolved	ug/L	1000	940	94	80-120	
Potassium, Dissolved	ug/L	20000	18700	93	80-120	
Selenium, Dissolved	ug/L	1000	999	100	80-120	
Silver, Dissolved	ug/L	500	472	94	80-120	
Sodium, Dissolved	ug/L	20000	17900	90	80-120	
Thallium, Dissolved	ug/L	1000	934	93	80-120	
Vanadium, Dissolved	ug/L	1000	923	92	80-120	
Zinc, Dissolved	ug/L	1000	955	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070841 3070842

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	20.0J	20000	20000	21100	21000	105	105	75-125	0	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	960	966	96	96	75-125	1	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	981	981	98	98	75-125	0	20	
Barium, Dissolved	ug/L	30.2	1000	1000	1020	1020	99	99	75-125	0	20	
Beryllium, Dissolved	ug/L	0.20J	1000	1000	1020	1020	101	102	75-125	0	20	
Cadmium, Dissolved	ug/L	0.26J	1000	1000	998	996	100	100	75-125	0	20	
Calcium, Dissolved	ug/L	34200	20000	20000	53300	53600	95	97	75-125	1	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	978	980	98	98	75-125	0	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	994	992	99	99	75-125	0	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	996	994	100	99	75-125	0	20	
Iron, Dissolved	ug/L	22.8J	20000	20000	19900	19800	99	99	75-125	0	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1000	1000	100	100	75-125	0	20	
Magnesium, Dissolved	ug/L	10100	20000	20000	30200	30400	101	102	75-125	0	20	
Manganese, Dissolved	ug/L	1.6J	1000	1000	1000	1000	100	100	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	975	976	97	98	75-125	0	20	
Potassium, Dissolved	ug/L	493J	20000	20000	20700	20600	101	101	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1040	1050	104	105	75-125	0	20	
Silver, Dissolved	ug/L	<0.38	500	500	502	500	100	100	75-125	0	20	
Sodium, Dissolved	ug/L	11000	20000	20000	29900	29500	94	93	75-125	1	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	981	982	98	98	75-125	0	20	
Vanadium, Dissolved	ug/L	4.1J	1000	1000	986	983	98	98	75-125	0	20	
Zinc, Dissolved	ug/L	7.6J	1000	1000	1000	1000	99	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 567403   Analysis Method: SM 2320B
QC Batch Method: SM 2320B   Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3079158   Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/08/18 07:45	

LABORATORY CONTROL SAMPLE & LCSD: 3079159   3079160

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.5	39.4	99	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079161   3079162

Parameter	Units	10449089010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	81.7	40	40	121	121	98	99	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079163   3079164

Parameter	Units	10449188001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	2200J ug/L	40	40	42.6	41.2	101	97	80-120	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 566289 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3072967 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/01/18 14:49	

LABORATORY CONTROL SAMPLE & LCSD: 3072968 3072969

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	958	952	96	95	80-120	1	5	

SAMPLE DUPLICATE: 3072970

Parameter	Units	10448860001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1820	1830	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 121949 — Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D — Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 525780 — Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 10:59	

LABORATORY CONTROL SAMPLE: 525781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 525790

Parameter	Units	10449444002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.0098J	4	75-125	M1

MATRIX SPIKE SAMPLE: 525792

Parameter	Units	10449442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.068	32	75-125	M1

SAMPLE DUPLICATE: 525789

Parameter	Units	10449444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 525791

Parameter	Units	10449442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 565502 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3068396 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	09/26/18 22:06	
Nitrate as N	mg/L	<0.015	0.10	0.015	09/26/18 22:06	
Sulfate	mg/L	<0.19	1.2	0.19	09/26/18 22:06	

LABORATORY CONTROL SAMPLE: 3068397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.4	99	90-110	
Nitrate as N	mg/L	1	1.0	100	90-110	
Sulfate	mg/L	12.5	12.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068398 3068399

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.5	12.5	12.5	13.6	13.7	97	97	90-110	0	20	
Nitrate as N	mg/L	0.21	1	1	1.2	1.2	97	98	90-110	1	20	
Sulfate	mg/L	1.6	12.5	12.5	14.4	14.5	102	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068400 3068401

Parameter	Units	10449089002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.1J	12.5	12.5	13.2	13.1	97	97	90-110	0	20	
Nitrate as N	mg/L	0.078J	1	1	1.0	1.0	97	97	90-110	0	20	
Sulfate	mg/L	2.9	12.5	12.5	15.7	15.7	102	102	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 565665 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3069192 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	09/27/18 12:29	FS

LABORATORY CONTROL SAMPLE: 3069193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.96	96	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3069194 3069195

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.18	1	1	1.2	1.2	100	104	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3069196 3069197

Parameter	Units	10449074001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.98	1.0	98	100	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 567809 — Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 — Analysis Description: 410.4 COD
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 3081643 — Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	10/09/18 10:01	

LABORATORY CONTROL SAMPLE: 3081644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081645 3081646

Parameter	Units	10449033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2100	2500	2500	4190	4290	83	87	90-110	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081647 3081648

Parameter	Units	10449033002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2060	2500	2500	5650	4440	144	95	90-110	24	20	M1,R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

QC Batch: 153285 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

METHOD BLANK: 606328 Matrix: Water
Associated Lab Samples: 10449089001, 10449089002, 10449089003, 10449089004, 10449089005, 10449089006, 10449089007, 10449089008, 10449089009, 10449089010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	09/28/18 12:54	

LABORATORY CONTROL SAMPLE: 606329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606330 606331

Parameter	Units	12116364001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	11.6	25	25	37.0	36.8	102	101	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606332 606333

Parameter	Units	12116461001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	13.2	25	25	38.6	38.2	101	100	80-120	1	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449089001	**MW6s-GW-092518**	RSK 175	565635		
10449089002	**MW11s-GW-092518**	RSK 175	565635		
10449089003	**MW10s-GW-092518**	RSK 175	565635		
10449089004	**MW12s-GW-092518**	RSK 175	565635		
10449089005	**MW7s-GW-092518**	RSK 175	565635		
10449089006	**MW1s-GW-092518**	RSK 175	565635		
10449089007	**MW8s-GW-092518**	RSK 175	565635		
10449089008	**MW9s-GW-092518**	RSK 175	565635		
10449089009	**FD1-092518**	RSK 175	565635		
10449089010	**FD2-092518**	RSK 175	565635		
10449089001	**MW6s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089002	**MW11s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089003	**MW10s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089004	**MW12s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089005	**MW7s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089006	**MW1s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089007	**MW8s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089008	**MW9s-GW-092518**	EPA 3010	565913	EPA 6010D	566817
10449089009	**FD1-092518**	EPA 3010	565913	EPA 6010D	566817
10449089010	**FD2-092518**	EPA 3010	565913	EPA 6010D	566817
10449089001	**MW6s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089002	**MW11s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089003	**MW10s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089004	**MW12s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089005	**MW7s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089006	**MW1s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089007	**MW8s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089008	**MW9s-GW-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089009	**FD1-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089010	**FD2-092518**	EPA 7470A	565915	EPA 7470A	566350
10449089001	**MW6s-GW-092518**	SM 2320B	567403		
10449089002	**MW11s-GW-092518**	SM 2320B	567403		
10449089003	**MW10s-GW-092518**	SM 2320B	567403		
10449089004	**MW12s-GW-092518**	SM 2320B	567403		
10449089005	**MW7s-GW-092518**	SM 2320B	567403		
10449089006	**MW1s-GW-092518**	SM 2320B	567403		
10449089007	**MW8s-GW-092518**	SM 2320B	567403		
10449089008	**MW9s-GW-092518**	SM 2320B	567403		
10449089009	**FD1-092518**	SM 2320B	567403		
10449089010	**FD2-092518**	SM 2320B	567403		
10449089001	**MW6s-GW-092518**	SM 2540C	566289		
10449089002	**MW11s-GW-092518**	SM 2540C	566289		
10449089003	**MW10s-GW-092518**	SM 2540C	566289		
10449089004	**MW12s-GW-092518**	SM 2540C	566289		
10449089005	**MW7s-GW-092518**	SM 2540C	566289		
10449089006	**MW1s-GW-092518**	SM 2540C	566289		
10449089007	**MW8s-GW-092518**	SM 2540C	566289		

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449089008	MW9s-GW-092518	SM 2540C	566289		
10449089009	FD1-092518	SM 2540C	566289		
10449089010	FD2-092518	SM 2540C	566289		
10449089001	MW6s-GW-092518	SM 4500-S-2 D	121949		
10449089002	MW11s-GW-092518	SM 4500-S-2 D	121949		
10449089003	MW10s-GW-092518	SM 4500-S-2 D	121949		
10449089004	MW12s-GW-092518	SM 4500-S-2 D	121949		
10449089005	MW7s-GW-092518	SM 4500-S-2 D	121949		
10449089006	MW1s-GW-092518	SM 4500-S-2 D	121949		
10449089007	MW8s-GW-092518	SM 4500-S-2 D	121949		
10449089008	MW9s-GW-092518	SM 4500-S-2 D	121949		
10449089009	FD1-092518	SM 4500-S-2 D	121949		
10449089010	FD2-092518	SM 4500-S-2 D	121949		
10449089001	MW6s-GW-092518	EPA 300.0	565502		
10449089002	MW11s-GW-092518	EPA 300.0	565502		
10449089003	MW10s-GW-092518	EPA 300.0	565502		
10449089004	MW12s-GW-092518	EPA 300.0	565502		
10449089005	MW7s-GW-092518	EPA 300.0	565502		
10449089006	MW1s-GW-092518	EPA 300.0	565502		
10449089007	MW8s-GW-092518	EPA 300.0	565502		
10449089008	MW9s-GW-092518	EPA 300.0	565502		
10449089009	FD1-092518	EPA 300.0	565502		
10449089010	FD2-092518	EPA 300.0	565502		
10449089001	MW6s-GW-092518	EPA 353.2	565665		
10449089002	MW11s-GW-092518	EPA 353.2	565665		
10449089003	MW10s-GW-092518	EPA 353.2	565665		
10449089004	MW12s-GW-092518	EPA 353.2	565665		
10449089005	MW7s-GW-092518	EPA 353.2	565665		
10449089006	MW1s-GW-092518	EPA 353.2	565665		
10449089007	MW8s-GW-092518	EPA 353.2	565665		
10449089008	MW9s-GW-092518	EPA 353.2	565665		
10449089009	FD1-092518	EPA 353.2	565665		
10449089010	FD2-092518	EPA 353.2	565665		
10449089001	MW6s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089002	MW11s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089003	MW10s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089004	MW12s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089005	MW7s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089006	MW1s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089007	MW8s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089008	MW9s-GW-092518	EPA 410.4	567809	EPA 410.4	568057
10449089009	FD1-092518	EPA 410.4	567809	EPA 410.4	568057
10449089010	FD2-092518	EPA 410.4	567809	EPA 410.4	568057
10449089001	MW6s-GW-092518	SM 5310C	153285		
10449089002	MW11s-GW-092518	SM 5310C	153285		
10449089003	MW10s-GW-092518	SM 5310C	153285		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449089004	**MW12s-GW-092518**	SM 5310C	153285		
10449089005	**MW7s-GW-092518**	SM 5310C	153285		
10449089006	**MW1s-GW-092518**	SM 5310C	153285		
10449089007	**MW8s-GW-092518**	SM 5310C	153285		
10449089008	**MW9s-GW-092518**	SM 5310C	153285		
10449089009	**FD1-092518**	SM 5310C	153285		
10449089010	**FD2-092518**	SM 5310C	153285		

Pace Analytical

CHAIN-OF-C[USTODY]

The Chain-of-Custo[dy] ... accurately.

WO# : 10449089

10449089

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MW6S-GW-092518	WT	G	9/25	815	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w1
2	MW11S-GW-092518	↓	↓	↓	900	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w2
3	MW10S-GW-092518	↓	↓	↓	930	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w3
4	MW12S-GW-092518	↓	↓	↓	945	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w4
5	MW7S-GW-092518	↓	↓	↓	1015	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w5
6	MW1S-GW-092518	↓	↓	↓	1030	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w6
7	MW8S-GW-092518	↓	↓	↓	1100	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w7
8	MW9S-GW-092518	↓	↓	↓	1130	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		w8
9	FD1-092518	↓	↓	↓	700	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		009
10	FD2-092518	↓	↓	↓	730	↓	↓	↓	9	X	X	X		X				X	X	X	X	X	X	X	X	X		010
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/25/18	1500	[signature]	9/26/18	1120	2.1	Y	Y	Y
*Field filtered by client							2.2	Y	Y	Y
							2.0	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/25/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO# : 10449089
PM: JMG Due Date: 10/10/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7785 4461/4483/4472

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: (9/26/18)

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.9, 2.4, 1.8 **Cooler Temp Corrected (°C):** 2.1, 2.6, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 9/26/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No ms/msd
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-10 1-10 1-10
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. ~~See exception sheet~~ JMG 092618
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certification not required for RSK or sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1330	Temp: See above	Corrected Temp:
Time: 1350	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 092618

Note: Whenever there is a discrepancy affecting North Carolina complia[nce] [i]f this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Labeled by: JJ

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
Cert. Needed: ☒ Yes ☐ No

Workorder: 10449089 Workorder Name: 1497 Freeman WA-Grain Handing Owner Received Date: 9/26/2018 Results Requested By: 10/10/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: 5632354 / 5310 TOC	LAB USE ONLY
1	MW6s-GW-092518	PS	9/25/2018 08:15	10449089001	Water	2	X	
2	MW11s-GW-092518	PS	9/25/2018 09:00	10449089002	Water	2	X	
3	MW10s-GW-092518	PS	9/25/2018 09:30	10449089003	Water	2	X	
4	MW12s-GW-092518	PS	9/25/2018 09:45	10449089004	Water	2	X	
5	MW7s-GW-092518	PS	9/25/2018 10:15	10449089005	Water	2	X	
6	MW1s-GW-092518	PS	9/25/2018 10:30	10449089006	Water	2	X	
7	MW8s-GW-092518	PS	9/25/2018 11:00	10449089007	Water	2	X	
8	MW9s-GW-092518	PS	9/25/2018 11:30	10449089008	Water	2	X	
9	FD1-092518	PS	9/25/2018 07:00	10449089009	Water	2	X	
10	FD2-092518	PS	9/25/2018 07:30	10449089010	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] /Pace	9/26/18 1620	DJ CL 9-26-18	1915	
2	DJ CL 9-26-18	2330	[signature] 9-27-18	0800	
3					

Cooler Temperature on Receipt 0.7 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO# : 12116372

PM: HRZ Due Date: 10/10/18

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 9.26.18 DC

Comments: RH 9-27-18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Gren Date: 9/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

Pace Analytical®
www.pacelabs.com

State Of Origin: WA
Cert. Needed: ☐ Yes ☒ No

Workorder: 10449089 Workorder Name: 1497 Freeman WA-Grain Handing Owner Received Date: 9/26/2018 Results Requested By: 10/10/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

WO#: 2084902
2084902

Requested Analysis: 5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	LAB USE ONLY
1	MW6s-GW-092518	PS	9/25/2018 08:15	10449089001	Water	1	X	
2	MW11s-GW-092518	PS	9/25/2018 09:00	10449089002	Water	1	X	
3	MW10s-GW-092518	PS	9/25/2018 09:30	10449089003	Water	1	X	
4	MW12s-GW-092518	PS	9/25/2018 09:45	10449089004	Water	1	X	
5	MW7s-GW-092518	PS	9/25/2018 10:15	10449089005	Water	1	X	
6	MW1s-GW-092518	PS	9/25/2018 10:30	10449089006	Water	1	X	
7	MW8s-GW-092518	PS	9/25/2018 11:00	10449089007	Water	1	X	
8	MW9s-GW-092518	PS	9/25/2018 11:30	10449089008	Water	1	X	
9	FD1-092518	PS	9/25/2018 07:00	10449089009	Water	1	X	
10	FD2-092518	PS	9/25/2018 07:30	10449089010	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] / Pace	9/26/18 1630		
2	FedEx	9-27-18 0910	[illegible] / Pace	9-27-18 0910
3				

Comments

Cooler Temperature on Receipt 1.7 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Re

WO#: 2084902

PM: CMM Due Date: 10/11/18

Proje CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑ Yes ☐ No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/28/18 CMM

Temp must be measured from Temperature blank when present

	Yes	No	N/A	Comments:
Temperature Blank Present"?	☑	☐	☐	1
Chain of Custody Present:	☑	☐	☐	2
Chain of Custody Complete:	☑	☐	☐	3
Chain of Custody Relinquished:	☑	☐	☐	4
Sampler Name & Signature on COC:	☐	☑	☐	5
Samples Arrived within Hold Time:	☑	☐	☐	6
Sufficient Volume:	☑	☐	☐	7
Correct Containers Used:	☑	☐	☐	8
Filtered vol. Rec. for Diss. tests	☐	☐	☑	9
Sample Labels match COC:	☑	☐	☐	10
All containers received within manafacture's precautionary and/or expiration dates.	☑	☐	☐	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑	☐	☐	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑	☐	☐	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ____ H2SO4 ____
Headspace in VOA Vials (>6mm):	☐	☐	☑	14
Trip Blank Present:	☐	☑		15

Client Notification/ Resolution:

Person Contacted: __________ Date/Time: __________

Comments/ Resolution: __________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449091

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449091001	**W26-GW-092418**	Water	09/24/18 15:30	09/26/18 11:20
10449091002	**Marlow No2-GW-092418**	Water	09/24/18 16:30	09/26/18 11:20
10449091003	**W20-GW-092418**	Water	09/24/18 17:35	09/26/18 11:20
10449091004	**MW13s-GW-092418**	Water	09/24/18 18:35	09/26/18 11:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449091001	**W26-GW-092418**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449091002	**Marlow No2-GW-092418**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449091003	**W20-GW-092418**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449091004	**MW13s-GW-092418**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449091001	**W26-GW-092418**					
EPA 6010D	Barium, Dissolved	6.0J	ug/L	10.0	10/03/18 16:28	
EPA 6010D	Calcium, Dissolved	38000	ug/L	500	10/03/18 16:28	
EPA 6010D	Magnesium, Dissolved	11200	ug/L	500	10/03/18 16:28	
EPA 6010D	Manganese, Dissolved	0.33J	ug/L	5.0	10/03/18 16:28	
EPA 6010D	Potassium, Dissolved	2040J	ug/L	2500	10/03/18 16:28	
EPA 6010D	Sodium, Dissolved	14300	ug/L	1000	10/03/18 16:28	
EPA 6010D	Vanadium, Dissolved	5.9J	ug/L	15.0	10/03/18 16:28	
EPA 6010D	Zinc, Dissolved	95.2	ug/L	20.0	10/03/18 16:28	
SM 2320B	Alkalinity, Total as CaCO3	170	mg/L	5.0	10/05/18 09:20	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	10/01/18 13:48	
EPA 300.0	Chloride	3.3	mg/L	1.2	09/26/18 15:00	
EPA 300.0	Nitrate as N	2.5	mg/L	0.10	09/26/18 15:00	
EPA 300.0	Sulfate	5.8	mg/L	1.2	09/26/18 15:00	
EPA 353.2	Nitrogen, NO2 plus NO3	2.2	mg/L	0.20	09/27/18 13:03	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	09/28/18 17:17	
10449091002	**Marlow No2-GW-092418**					
RSK 175	Methane	267	ug/L	10.0	09/27/18 09:57	
EPA 6010D	Aluminum, Dissolved	17.3J	ug/L	200	10/03/18 16:39	
EPA 6010D	Barium, Dissolved	24.4	ug/L	10.0	10/03/18 16:39	
EPA 6010D	Calcium, Dissolved	58300	ug/L	500	10/03/18 16:39	
EPA 6010D	Cobalt, Dissolved	1.0J	ug/L	10.0	10/03/18 16:39	
EPA 6010D	Iron, Dissolved	4030	ug/L	50.0	10/03/18 16:39	
EPA 6010D	Magnesium, Dissolved	16900	ug/L	500	10/03/18 16:39	
EPA 6010D	Manganese, Dissolved	104	ug/L	5.0	10/03/18 16:39	
EPA 6010D	Potassium, Dissolved	601J	ug/L	2500	10/03/18 16:39	
EPA 6010D	Sodium, Dissolved	16800	ug/L	1000	10/03/18 16:39	
EPA 6010D	Vanadium, Dissolved	1.3J	ug/L	15.0	10/03/18 16:39	
EPA 6010D	Zinc, Dissolved	20.7	ug/L	20.0	10/03/18 16:39	
SM 2320B	Alkalinity, Total as CaCO3	243	mg/L	5.0	10/05/18 09:25	
SM 2540C	Total Dissolved Solids	278	mg/L	10.0	10/01/18 13:48	
EPA 300.0	Chloride	2.1	mg/L	1.2	09/26/18 15:15	
EPA 300.0	Nitrate as N	0.82	mg/L	0.10	09/26/18 15:15	
EPA 300.0	Sulfate	2.7	mg/L	1.2	09/26/18 15:15	
EPA 353.2	Nitrogen, NO2 plus NO3	0.58	mg/L	0.10	09/27/18 12:15	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	09/28/18 17:30	
10449091003	**W20-GW-092418**					
RSK 175	Methane	476	ug/L	10.0	09/27/18 10:05	
EPA 6010D	Barium, Dissolved	4.8J	ug/L	10.0	10/03/18 16:41	
EPA 6010D	Calcium, Dissolved	13900	ug/L	500	10/03/18 16:41	
EPA 6010D	Iron, Dissolved	557	ug/L	50.0	10/03/18 16:41	
EPA 6010D	Magnesium, Dissolved	6740	ug/L	500	10/03/18 16:41	
EPA 6010D	Manganese, Dissolved	70.4	ug/L	5.0	10/03/18 16:41	
EPA 6010D	Potassium, Dissolved	1880J	ug/L	2500	10/03/18 16:41	
EPA 6010D	Sodium, Dissolved	8990	ug/L	1000	10/03/18 16:41	
SM 2320B	Alkalinity, Total as CaCO3	91.9	mg/L	5.0	10/05/18 09:29	
SM 2540C	Total Dissolved Solids	86.0	mg/L	10.0	10/01/18 13:48	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449091

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449091003	**W20-GW-092418**					
EPA 300.0	Chloride	2.4	mg/L	1.2	09/26/18 15:30	
EPA 300.0	Nitrate as N	0.055J	mg/L	0.10	09/26/18 15:30	
EPA 300.0	Sulfate	0.49J	mg/L	1.2	09/26/18 15:30	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	09/28/18 18:09	
10449091004	**MW13s-GW-092418**					
EPA 6010D	Aluminum, Dissolved	60.2J	ug/L	200	10/03/18 16:42	
EPA 6010D	Barium, Dissolved	55.6	ug/L	10.0	10/03/18 16:42	
EPA 6010D	Calcium, Dissolved	33900	ug/L	500	10/03/18 16:42	
EPA 6010D	Chromium, Dissolved	0.53J	ug/L	10.0	10/03/18 16:42	
EPA 6010D	Iron, Dissolved	45.0J	ug/L	50.0	10/03/18 16:42	
EPA 6010D	Magnesium, Dissolved	10300	ug/L	500	10/03/18 16:42	
EPA 6010D	Manganese, Dissolved	0.82J	ug/L	5.0	10/03/18 16:42	
EPA 6010D	Potassium, Dissolved	1210J	ug/L	2500	10/03/18 16:42	
EPA 6010D	Sodium, Dissolved	12600	ug/L	1000	10/03/18 16:42	
EPA 6010D	Vanadium, Dissolved	9.7J	ug/L	15.0	10/03/18 16:42	
EPA 6010D	Zinc, Dissolved	3.2J	ug/L	20.0	10/03/18 16:42	
EPA 7470A	Mercury, Dissolved	0.080J	ug/L	0.20	10/05/18 17:09	
SM 2320B	Alkalinity, Total as CaCO3	158	mg/L	5.0	10/05/18 09:34	
SM 2540C	Total Dissolved Solids	209	mg/L	10.0	10/01/18 13:48	
EPA 300.0	Chloride	1.2J	mg/L	1.2	09/26/18 16:46	
EPA 300.0	Nitrate as N	0.33	mg/L	0.10	09/26/18 16:46	
EPA 300.0	Sulfate	4.6	mg/L	1.2	09/26/18 16:46	
EPA 353.2	Nitrogen, NO2 plus NO3	0.34	mg/L	0.10	09/27/18 12:18	
SM 5310C	Total Organic Carbon	0.64J	mg/L	1.0	09/28/18 18:22	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 565635

R1: RPD value was outside control limits.

- DUP (Lab ID: 3069113)
    - Methane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 567402

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449193001,10449744001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3079156)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 3079157)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449091

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- MW13s-GW-092418 (Lab ID: 10449091004)
- Marlow No2-GW-092418 (Lab ID: 10449091002)
- W20-GW-092418 (Lab ID: 10449091003)
- W26-GW-092418 (Lab ID: 10449091001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 121949

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 525790)
  - Sulfide, Total
- MS (Lab ID: 525792)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 567809

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449033001,10449033002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3081645)
  - Chemical Oxygen Demand
- MS (Lab ID: 3081647)
  - Chemical Oxygen Demand
- MSD (Lab ID: 3081646)
  - Chemical Oxygen Demand

R1: RPD value was outside control limits.

- MSD (Lab ID: 3081648)
  - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: W26-GW-092418 **Lab ID: 10449091001** Collected: 09/24/18 15:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 09:50	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 09:50	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 09:50	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:28	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:28	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:28	7440-38-2	
Barium, Dissolved	**6.0J**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:28	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:28	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:28	7440-43-9	
Calcium, Dissolved	**38000**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:28	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:28	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:28	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:28	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:28	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:28	7439-92-1	
Magnesium, Dissolved	**11200**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:28	7439-95-4	
Manganese, Dissolved	**0.33J**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:28	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:28	7440-02-0	
Potassium, Dissolved	**2040J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:28	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:28	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:28	7440-22-4	
Sodium, Dissolved	**14300**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:28	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:28	7440-28-0	
Vanadium, Dissolved	**5.9J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:28	7440-62-2	
Zinc, Dissolved	**95.2**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:28	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 17:03	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**170**	mg/L	5.0	1.0	1		10/05/18 09:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**240**	mg/L	10.0	5.0	1		10/01/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:00	18496-25-8	H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.2	0.28	1		09/26/18 15:00	16887-00-6	
Nitrate as N	**2.5**	mg/L	0.10	0.015	1		09/26/18 15:00	14797-55-8	
Sulfate	**5.8**	mg/L	1.2	0.19	1		09/26/18 15:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: W26-GW-092418 **Lab ID: 10449091001** Collected: 09/24/18 15:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.2**	mg/L	0.20	0.035	2		09/27/18 13:03		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:18		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		09/28/18 17:17	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: Marlow No2-GW-092418 **Lab ID: 10449091002** Collected: 09/24/18 16:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 09:57	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 09:57	74-85-1	
Methane	**267**	ug/L	10.0	4.9	1		09/27/18 09:57	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**17.3J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:39	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:39	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:39	7440-38-2	
Barium, Dissolved	**24.4**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:39	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:39	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:39	7440-43-9	
Calcium, Dissolved	**58300**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:39	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:39	7440-47-3	
Cobalt, Dissolved	**1.0J**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:39	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:39	7440-50-8	
Iron, Dissolved	**4030**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:39	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:39	7439-92-1	
Magnesium, Dissolved	**16900**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:39	7439-95-4	
Manganese, Dissolved	**104**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:39	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:39	7440-02-0	
Potassium, Dissolved	**601J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:39	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:39	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:39	7440-22-4	
Sodium, Dissolved	**16800**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:39	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:39	7440-28-0	
Vanadium, Dissolved	**1.3J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:39	7440-62-2	
Zinc, Dissolved	**20.7**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:39	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 17:05	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**243**	mg/L	5.0	1.0	1		10/05/18 09:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**278**	mg/L	10.0	5.0	1		10/01/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:01	18496-25-8	H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.1**	mg/L	1.2	0.28	1		09/26/18 15:15	16887-00-6	
Nitrate as N	**0.82**	mg/L	0.10	0.015	1		09/26/18 15:15	14797-55-8	
Sulfate	**2.7**	mg/L	1.2	0.19	1		09/26/18 15:15	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: Marlow No2-GW-092418 **Lab ID: 10449091002** Collected: 09/24/18 16:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.58**	mg/L	0.10	0.018	1		09/27/18 12:15		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:18		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		09/28/18 17:30	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: W20-GW-092418 **Lab ID: 10449091003** Collected: 09/24/18 17:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 10:05	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 10:05	74-85-1	
Methane	**476**	ug/L	10.0	4.9	1		09/27/18 10:05	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:41	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:41	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:41	7440-38-2	
Barium, Dissolved	**4.8J**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:41	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:41	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:41	7440-43-9	
Calcium, Dissolved	**13900**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:41	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:41	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:41	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:41	7440-50-8	
Iron, Dissolved	**557**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:41	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:41	7439-92-1	
Magnesium, Dissolved	**6740**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:41	7439-95-4	
Manganese, Dissolved	**70.4**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:41	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:41	7440-02-0	
Potassium, Dissolved	**1880J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:41	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:41	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:41	7440-22-4	
Sodium, Dissolved	**8990**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:41	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:41	7440-28-0	
Vanadium, Dissolved	**<0.29**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:41	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:41	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 17:07	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**91.9**	mg/L	5.0	1.0	1		10/05/18 09:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**86.0**	mg/L	10.0	5.0	1		10/01/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:03	18496-25-8	H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.28	1		09/26/18 15:30	16887-00-6	
Nitrate as N	**0.055J**	mg/L	0.10	0.015	1		09/26/18 15:30	14797-55-8	
Sulfate	**0.49J**	mg/L	1.2	0.19	1		09/26/18 15:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: W20-GW-092418 **Lab ID: 10449091003** Collected: 09/24/18 17:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.018**	mg/L	0.10	0.018	1		09/27/18 12:17		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:18		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		09/28/18 18:09	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: MW13s-GW-092418 **Lab ID: 10449091004** Collected: 09/24/18 18:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		09/27/18 10:12	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		09/27/18 10:12	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		09/27/18 10:12	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**60.2J**	ug/L	200	15.5	1	10/02/18 13:20	10/03/18 16:42	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 13:20	10/03/18 16:42	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 13:20	10/03/18 16:42	7440-38-2	
Barium, Dissolved	**55.6**	ug/L	10.0	0.18	1	10/02/18 13:20	10/03/18 16:42	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 13:20	10/03/18 16:42	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 13:20	10/03/18 16:42	7440-43-9	
Calcium, Dissolved	**33900**	ug/L	500	13.9	1	10/02/18 13:20	10/03/18 16:42	7440-70-2	
Chromium, Dissolved	**0.53J**	ug/L	10.0	0.49	1	10/02/18 13:20	10/03/18 16:42	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 13:20	10/03/18 16:42	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 13:20	10/03/18 16:42	7440-50-8	
Iron, Dissolved	**45.0J**	ug/L	50.0	4.3	1	10/02/18 13:20	10/03/18 16:42	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 13:20	10/03/18 16:42	7439-92-1	
Magnesium, Dissolved	**10300**	ug/L	500	9.8	1	10/02/18 13:20	10/03/18 16:42	7439-95-4	
Manganese, Dissolved	**0.82J**	ug/L	5.0	0.22	1	10/02/18 13:20	10/03/18 16:42	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 13:20	10/03/18 16:42	7440-02-0	
Potassium, Dissolved	**1210J**	ug/L	2500	310	1	10/02/18 13:20	10/03/18 16:42	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 13:20	10/03/18 16:42	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 13:20	10/03/18 16:42	7440-22-4	
Sodium, Dissolved	**12600**	ug/L	1000	21.5	1	10/02/18 13:20	10/03/18 16:42	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 13:20	10/03/18 16:42	7440-28-0	
Vanadium, Dissolved	**9.7J**	ug/L	15.0	0.29	1	10/02/18 13:20	10/03/18 16:42	7440-62-2	
Zinc, Dissolved	**3.2J**	ug/L	20.0	2.5	1	10/02/18 13:20	10/03/18 16:42	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.080J**	ug/L	0.20	0.078	1	09/28/18 19:38	10/05/18 17:09	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**158**	mg/L	5.0	1.0	1		10/05/18 09:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**209**	mg/L	10.0	5.0	1		10/01/18 13:48		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:04	18496-25-8	H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.2J**	mg/L	1.2	0.28	1		09/26/18 16:46	16887-00-6	
Nitrate as N	**0.33**	mg/L	0.10	0.015	1		09/26/18 16:46	14797-55-8	
Sulfate	**4.6**	mg/L	1.2	0.19	1		09/26/18 16:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Sample: MW13s-GW-092418 **Lab ID: 10449091004** Collected: 09/24/18 18:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.34**	mg/L	0.10	0.018	1		09/27/18 12:18		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/08/18 11:28	10/09/18 10:18		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.64J**	mg/L	1.0	0.20	1		09/28/18 18:22	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 565635 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3069110 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	09/27/18 09:11	
Ethene	ug/L	<2.9	10.0	2.9	09/27/18 09:11	
Methane	ug/L	<4.9	10.0	4.9	09/27/18 09:11	

LABORATORY CONTROL SAMPLE & LCSD: 3069111 3069112

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	114	115	101	101	85-115	1	20	
Ethene	ug/L	106	109	109	103	102	85-115	0	20	
Methane	ug/L	60.7	62.0	62.7	102	103	85-115	1	20	

SAMPLE DUPLICATE: 3069113

Parameter	Units	10448808001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<10.0	<3.0		20	
Ethene	ug/L	<10.0	<2.9		20	
Methane	ug/L	159	114	33	20	R1

SAMPLE DUPLICATE: 3069114

Parameter	Units	10449089010 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 565915 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3070847 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	10/05/18 16:30	

LABORATORY CONTROL SAMPLE: 3070848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070849 3070850

Parameter	Units	10449089002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.2	5.2	104	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 565913 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3070839 Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	10/03/18 15:54	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	10/03/18 15:54	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	10/03/18 15:54	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	10/03/18 15:54	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	10/03/18 15:54	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	10/03/18 15:54	
Calcium, Dissolved	ug/L	16.3J	500	13.9	10/03/18 15:54	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	10/03/18 15:54	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	10/03/18 15:54	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	10/03/18 15:54	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	10/03/18 15:54	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	10/03/18 15:54	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	10/03/18 15:54	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	10/03/18 15:54	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	10/03/18 15:54	
Potassium, Dissolved	ug/L	<310	2500	310	10/03/18 15:54	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	10/03/18 15:54	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	10/03/18 15:54	
Sodium, Dissolved	ug/L	87.6J	1000	21.5	10/03/18 15:54	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	10/03/18 15:54	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	10/03/18 15:54	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	10/03/18 15:54	

LABORATORY CONTROL SAMPLE: 3070840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19900	100	80-120	
Antimony, Dissolved	ug/L	1000	941	94	80-120	
Arsenic, Dissolved	ug/L	1000	921	92	80-120	
Barium, Dissolved	ug/L	1000	945	95	80-120	
Beryllium, Dissolved	ug/L	1000	955	95	80-120	
Cadmium, Dissolved	ug/L	1000	944	94	80-120	
Calcium, Dissolved	ug/L	20000	18700	93	80-120	
Chromium, Dissolved	ug/L	1000	926	93	80-120	
Cobalt, Dissolved	ug/L	1000	952	95	80-120	
Copper, Dissolved	ug/L	1000	934	93	80-120	
Iron, Dissolved	ug/L	20000	18600	93	80-120	
Lead, Dissolved	ug/L	1000	955	95	80-120	
Magnesium, Dissolved	ug/L	20000	19100	96	80-120	
Manganese, Dissolved	ug/L	1000	959	96	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

LABORATORY CONTROL SAMPLE: 3070840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	940	94	80-120	
Potassium, Dissolved	ug/L	20000	18700	93	80-120	
Selenium, Dissolved	ug/L	1000	999	100	80-120	
Silver, Dissolved	ug/L	500	472	94	80-120	
Sodium, Dissolved	ug/L	20000	17900	90	80-120	
Thallium, Dissolved	ug/L	1000	934	93	80-120	
Vanadium, Dissolved	ug/L	1000	923	92	80-120	
Zinc, Dissolved	ug/L	1000	955	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070841 3070842

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	20.0J	20000	20000	21100	21000	105	105	75-125	0	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	960	966	96	96	75-125	1	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	981	981	98	98	75-125	0	20	
Barium, Dissolved	ug/L	30.2	1000	1000	1020	1020	99	99	75-125	0	20	
Beryllium, Dissolved	ug/L	0.20J	1000	1000	1020	1020	101	102	75-125	0	20	
Cadmium, Dissolved	ug/L	0.26J	1000	1000	998	996	100	100	75-125	0	20	
Calcium, Dissolved	ug/L	34200	20000	20000	53300	53600	95	97	75-125	1	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	978	980	98	98	75-125	0	20	
Cobalt, Dissolved	ug/L	<0.50	1000	1000	994	992	99	99	75-125	0	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	996	994	100	99	75-125	0	20	
Iron, Dissolved	ug/L	22.8J	20000	20000	19900	19800	99	99	75-125	0	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1000	1000	100	100	75-125	0	20	
Magnesium, Dissolved	ug/L	10100	20000	20000	30200	30400	101	102	75-125	0	20	
Manganese, Dissolved	ug/L	1.6J	1000	1000	1000	1000	100	100	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	975	976	97	98	75-125	0	20	
Potassium, Dissolved	ug/L	493J	20000	20000	20700	20600	101	101	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1040	1050	104	105	75-125	0	20	
Silver, Dissolved	ug/L	<0.38	500	500	502	500	100	100	75-125	0	20	
Sodium, Dissolved	ug/L	11000	20000	20000	29900	29500	94	93	75-125	1	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	981	982	98	98	75-125	0	20	
Vanadium, Dissolved	ug/L	4.1J	1000	1000	986	983	98	98	75-125	0	20	
Zinc, Dissolved	ug/L	7.6J	1000	1000	1000	1000	99	100	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 567402 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3079151 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/05/18 07:50	

LABORATORY CONTROL SAMPLE & LCSD: 3079152 | 3079153

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.1	39.2	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079154 | 3079155

Parameter	Units	10449744001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	31.8	40	40	70.3	68.4	96	92	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079156 | 3079157

Parameter	Units	10449193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	89100 ug/L	40	40	91.8	94.0	7	12	80-120	2	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 566287 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3072962 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/01/18 13:48	

LABORATORY CONTROL SAMPLE: 3072963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	960	96	80-120	

SAMPLE DUPLICATE: 3072964

Parameter	Units	10448815001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	289	284	2	5	

SAMPLE DUPLICATE: 3072965

Parameter	Units	10448815002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	337	327	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 121949 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 525780 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 10:59	

LABORATORY CONTROL SAMPLE: 525781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 525790

Parameter	Units	10449444002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.0098J	4	75-125	M1

MATRIX SPIKE SAMPLE: 525792

Parameter	Units	10449442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.068	32	75-125	M1

SAMPLE DUPLICATE: 525789

Parameter	Units	10449444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 525791

Parameter	Units	10449442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 565502 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3068396 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	09/26/18 22:06	
Nitrate as N	mg/L	<0.015	0.10	0.015	09/26/18 22:06	
Sulfate	mg/L	<0.19	1.2	0.19	09/26/18 22:06	

LABORATORY CONTROL SAMPLE: 3068397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.4	99	90-110	
Nitrate as N	mg/L	1	1.0	100	90-110	
Sulfate	mg/L	12.5	12.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068398 3068399

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.5	12.5	12.5	13.6	13.7	97	97	90-110	0	20	
Nitrate as N	mg/L	0.21	1	1	1.2	1.2	97	98	90-110	1	20	
Sulfate	mg/L	1.6	12.5	12.5	14.4	14.5	102	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068400 3068401

Parameter	Units	10449089002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.1J	12.5	12.5	13.2	13.1	97	97	90-110	0	20	
Nitrate as N	mg/L	0.078J	1	1	1.0	1.0	97	97	90-110	0	20	
Sulfate	mg/L	2.9	12.5	12.5	15.7	15.7	102	102	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 565665 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3069192 | Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	09/27/18 12:29	FS

LABORATORY CONTROL SAMPLE: 3069193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.96	96	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3069194 3069195

Parameter	Units	10449089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.18	1	1	1.2	1.2	100	104	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3069196 3069197

Parameter	Units	10449074001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.98	1.0	98	100	90-110	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 567809 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 3081643 Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	10/09/18 10:01	

LABORATORY CONTROL SAMPLE: 3081644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081645 3081646

Parameter	Units	10449033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2100	2500	2500	4190	4290	83	87	90-110	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081647 3081648

Parameter	Units	10449033002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2060	2500	2500	5650	4440	144	95	90-110	24	20	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

QC Batch: 153285 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

METHOD BLANK: 606328 Matrix: Water
Associated Lab Samples: 10449091001, 10449091002, 10449091003, 10449091004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.20	1.0	0.20	09/28/18 12:54	

LABORATORY CONTROL SAMPLE: 606329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606330 606331

Parameter	Units	12116364001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	11.6	25	25	37.0	36.8	102	101	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606332 606333

Parameter	Units	12116461001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	13.2	25	25	38.6	38.2	101	100	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449091

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449091001	**W26-GW-092418**	RSK 175	565635		
10449091002	**Marlow No2-GW-092418**	RSK 175	565635		
10449091003	**W20-GW-092418**	RSK 175	565635		
10449091004	**MW13s-GW-092418**	RSK 175	565635		
10449091001	**W26-GW-092418**	EPA 3010	565913	EPA 6010D	566817
10449091002	**Marlow No2-GW-092418**	EPA 3010	565913	EPA 6010D	566817
10449091003	**W20-GW-092418**	EPA 3010	565913	EPA 6010D	566817
10449091004	**MW13s-GW-092418**	EPA 3010	565913	EPA 6010D	566817
10449091001	**W26-GW-092418**	EPA 7470A	565915	EPA 7470A	566350
10449091002	**Marlow No2-GW-092418**	EPA 7470A	565915	EPA 7470A	566350
10449091003	**W20-GW-092418**	EPA 7470A	565915	EPA 7470A	566350
10449091004	**MW13s-GW-092418**	EPA 7470A	565915	EPA 7470A	566350
10449091001	**W26-GW-092418**	SM 2320B	567402		
10449091002	**Marlow No2-GW-092418**	SM 2320B	567402		
10449091003	**W20-GW-092418**	SM 2320B	567402		
10449091004	**MW13s-GW-092418**	SM 2320B	567402		
10449091001	**W26-GW-092418**	SM 2540C	566287		
10449091002	**Marlow No2-GW-092418**	SM 2540C	566287		
10449091003	**W20-GW-092418**	SM 2540C	566287		
10449091004	**MW13s-GW-092418**	SM 2540C	566287		
10449091001	**W26-GW-092418**	SM 4500-S-2 D	121949		
10449091002	**Marlow No2-GW-092418**	SM 4500-S-2 D	121949		
10449091003	**W20-GW-092418**	SM 4500-S-2 D	121949		
10449091004	**MW13s-GW-092418**	SM 4500-S-2 D	121949		
10449091001	**W26-GW-092418**	EPA 300.0	565502		
10449091002	**Marlow No2-GW-092418**	EPA 300.0	565502		
10449091003	**W20-GW-092418**	EPA 300.0	565502		
10449091004	**MW13s-GW-092418**	EPA 300.0	565502		
10449091001	**W26-GW-092418**	EPA 353.2	565665		
10449091002	**Marlow No2-GW-092418**	EPA 353.2	565665		
10449091003	**W20-GW-092418**	EPA 353.2	565665		
10449091004	**MW13s-GW-092418**	EPA 353.2	565665		
10449091001	**W26-GW-092418**	EPA 410.4	567809	EPA 410.4	568057
10449091002	**Marlow No2-GW-092418**	EPA 410.4	567809	EPA 410.4	568057
10449091003	**W20-GW-092418**	EPA 410.4	567809	EPA 410.4	568057
10449091004	**MW13s-GW-092418**	EPA 410.4	567809	EPA 410.4	568057
10449091001	**W26-GW-092418**	SM 5310C	153285		
10449091002	**Marlow No2-GW-092418**	SM 5310C	153285		
10449091003	**W20-GW-092418**	SM 5310C	153285		
10449091004	**MW13s-GW-092418**	SM 5310C	153285		

Pace Analytical

CHAIN-O[F-CUSTODY / Analytical Request Document] — partly covered by the work-order label

The Chain-of[-Custody is a LEGAL DOCUMENT. All relevant fields must be com]pleted accurately.

WO#: 10449091

10449091

Page: 1 Of 1

Section A Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C Invoice Information:

Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	W26-GW-092418	WT	G	9/24	1530	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				001
2	MarlowNo2-GW-092418	↓	↓		1630	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				002
3	W20-GW-092418	↓	↓		1735	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				003
4	MW135-GW-092418	↓	↓		1855	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X				004
5	~~Trip Blank-092418~~	~~X~~	↓		~~700~~	—																								
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/25/18	1500	[signature] Pace	9/26/18	1120	2.1	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/24/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018
	Document No.: F-MN-L-210-rev.25	Page 1 of 2
		Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10449091
PM: JMG **Due Date: 10/10/18**
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4406 7785 4972

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.9 **Cooler Temp Corrected (°C):** 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** JG 9/26/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No ms/msd
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No	JMG 92618	10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	~~☒ N/A~~	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-4 ; ~~1-4~~ JG 9/26/18 (1-4) ; 1-4
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. ~~See exception sheet~~ Headspace vials.
3 Trip Blanks Present?	☐ Yes	~~☒ No~~	☒ N/A JMG 092618	15. JMG 092618
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1350	Temp: 1.9	Corrected Temp: 2.1
Time: 1410	put in cooler	
Time: JG 9/26/18	Temp:	Corrected Temp:

Project Manager Review: **Date:** 09/26/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Label by: JJ

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
Cert. Needed: ☒ Yes ☐ No

Workorder: 10449091 Workorder Name: 1497 Freeman WA-Grain Handing Owner Received Date: 9/26/2018 Results Requested By: 10/10/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4 DG9S	5632354 / 5310 TOC	LAB USE ONLY
1	W26-GW-092418	PS	9/24/2018 15:30	10449091001	Water	2	X	
2	Marlow No2-GW-092418	PS	9/24/2018 16:30	10449091002	Water	2	X	
3	W20-GW-092418	PS	9/24/2018 17:35	10449091003	Water	2	X	
4	MW13s-GW-092418	PS	9/24/2018 18:35	10449091004	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle Pace	9/26/18 1645	DJ Clay 9-26-18	1915
2	DJ Clay 9-26-18	2330	[illegible] 9-27-18	0800
3				

Comments

Cooler Temperature on Receipt 0.7 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO#: 12116373

PM: HRZ Due Date: 10/10/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 9-26-18 DS

Comments: RH 9-27-18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 9/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

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State Of Origin: WA
Cert. Needed: ☐ Yes ☒ No

Workorder: 10449091 **Workorder Name:** 1497 Freeman WA-Grain Handing **Owner Received Date:** 9/26/2018 **Results Requested By:** 10/10/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Acetate 500mL

WO#: 2084901

2084901

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	BP2Z	NaOH+Z				Requested Analysis: 5636267 / 4500 Sulfide											LAB USE ONLY
1	W26-GW-092418	PS	9/24/2018 15:30	10449091001	Water		1					X											
2	Marlow No2-GW-092418	PS	9/24/2018 16:30	10449091002	Water		1					X											
3	W20-GW-092418	PS	9/24/2018 17:35	10449091003	Water		1					X											
4	MW13s-GW-092418	PS	9/24/2018 18:35	10449091004	Water		1					X											
5																							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] / Pace	9/26/18 1640			
2	Fed Ex	9-27-18 0910	[signature] Pace	9-27-18	0910
3					

Cooler Temperature on Receipt 1.7 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upo F

WO# : 2084901

PM: CMM Due Date: 10/10/18
CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑Yes ☐No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/28/18 CMM

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☐No ☑N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ______________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 09, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449095001	**W26-GW-092418**	Water	09/24/18 15:30	09/26/18 11:20
10449095002	**Marlow No2-GW-092418**	Water	09/24/18 16:30	09/26/18 11:20
10449095003	**W20-GW-092418**	Water	09/24/18 17:35	09/26/18 11:20
10449095004	**MW13s-GW-092418**	Water	09/24/18 18:35	09/26/18 11:20

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449095001	**W26-GW-092418**	EPA 8260B	AEZ	83	PASI-M
10449095002	**Marlow No2-GW-092418**	EPA 8260B	AEZ	83	PASI-M
10449095003	**W20-GW-092418**	EPA 8260B	AEZ	83	PASI-M
10449095004	**MW13s-GW-092418**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449095001	**W26-GW-092418**					
EPA 8260B	Carbon tetrachloride	27.1	ug/L	2.5	10/08/18 15:37	
EPA 8260B	Chloroform	1.6	ug/L	1.0	10/05/18 17:13	
10449095002	**Marlow No2-GW-092418**					
EPA 8260B	Carbon tetrachloride	30.6	ug/L	2.5	10/08/18 14:25	
EPA 8260B	Chloroform	1.1	ug/L	1.0	10/05/18 17:37	
10449095003	**W20-GW-092418**					
EPA 8260B	1,2,4-Trimethylbenzene	0.72J	ug/L	1.0	10/05/18 18:01	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

General Information:
4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567465

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- MS (Lab ID: 3079301)
  - Carbon tetrachloride
  - Trichloroethene
- MSD (Lab ID: 3079302)
  - Carbon tetrachloride

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- BLANK (Lab ID: 3079299)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 09, 2018

Analyte Comments:

QC Batch: 567465

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- LCS (Lab ID: 3079300)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3079301)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3079302)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW13s-GW-092418 (Lab ID: 10449095004)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Marlow No2-GW-092418 (Lab ID: 10449095002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- W20-GW-092418 (Lab ID: 10449095003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- W26-GW-092418 (Lab ID: 10449095001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: W26-GW-092418 **Lab ID: 10449095001** Collected: 09/24/18 15:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 17:13	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 17:13	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:13	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 17:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 17:13	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:13	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:13	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:13	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 17:13	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 17:13	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:13	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:13	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 17:13	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 17:13	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 17:13	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 17:13	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 17:13	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 17:13	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 17:13	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:13	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 17:13	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:13	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 17:13	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 17:13	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 17:13	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 17:13	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:13	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 17:13	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 17:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 17:13	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 17:13	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 17:13	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 17:13	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 17:13	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 17:13	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 17:13	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 17:13	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 17:13	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 17:13	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 17:13	75-15-0	
Carbon tetrachloride	**27.1**	ug/L	2.5	0.94	5		10/08/18 15:37	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:13	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 17:13	75-00-3	
Chloroform	**1.6**	ug/L	1.0	0.45	1		10/05/18 17:13	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 17:13	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 17:13	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449095

Sample: W26-GW-092418 **Lab ID: 10449095001** Collected: 09/24/18 15:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 17:13	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 17:13	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 17:13	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 17:13	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 17:13	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 17:13	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 17:13	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 17:13	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:13	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 17:13	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 17:13	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 17:13	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:13	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 17:13	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 17:13	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 17:13	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 17:13	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 17:13	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 17:13	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 17:13	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 17:13	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:13	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 17:13	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 17:13	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 17:13	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 17:13	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:13	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:13	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 17:13	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 17:13	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:13	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 17:13	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 17:13	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 17:13	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/05/18 17:13	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		10/05/18 17:13	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/05/18 17:13	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: Marlow No2-GW-092418 **Lab ID: 10449095002** Collected: 09/24/18 16:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 17:37	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 17:37	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:37	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 17:37	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 17:37	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:37	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:37	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:37	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 17:37	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 17:37	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:37	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:37	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 17:37	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 17:37	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 17:37	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 17:37	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 17:37	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 17:37	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 17:37	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:37	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 17:37	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:37	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 17:37	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 17:37	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 17:37	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 17:37	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:37	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 17:37	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 17:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 17:37	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 17:37	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 17:37	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 17:37	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 17:37	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 17:37	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 17:37	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 17:37	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 17:37	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 17:37	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 17:37	75-15-0	
Carbon tetrachloride	**30.6**	ug/L	2.5	0.94	5		10/08/18 14:25	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:37	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 17:37	75-00-3	
Chloroform	**1.1**	ug/L	1.0	0.45	1		10/05/18 17:37	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 17:37	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 17:37	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: Marlow No2-GW-092418 **Lab ID: 10449095002** Collected: 09/24/18 16:30 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 17:37	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 17:37	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 17:37	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 17:37	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 17:37	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 17:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 17:37	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 17:37	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 17:37	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 17:37	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 17:37	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 17:37	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 17:37	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 17:37	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 17:37	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 17:37	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 17:37	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 17:37	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 17:37	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 17:37	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 17:37	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 17:37	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 17:37	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 17:37	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 17:37	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 17:37	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:37	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:37	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 17:37	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 17:37	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 17:37	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 17:37	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 17:37	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 17:37	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 17:37	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/05/18 17:37	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/05/18 17:37	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: W20-GW-092418 **Lab ID: 10449095003** Collected: 09/24/18 17:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 18:01	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 18:01	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:01	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 18:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 18:01	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:01	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:01	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:01	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 18:01	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 18:01	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:01	120-82-1	
1,2,4-Trimethylbenzene	**0.72J**	ug/L	1.0	0.20	1		10/05/18 18:01	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 18:01	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 18:01	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 18:01	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 18:01	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 18:01	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 18:01	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 18:01	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:01	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 18:01	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:01	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 18:01	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 18:01	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 18:01	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 18:01	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:01	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 18:01	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 18:01	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 18:01	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 18:01	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 18:01	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 18:01	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 18:01	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 18:01	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 18:01	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 18:01	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 18:01	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 18:01	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 18:01	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 18:01	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:01	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 18:01	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 18:01	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 18:01	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 18:01	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: W20-GW-092418 **Lab ID: 10449095003** Collected: 09/24/18 17:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 18:01	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 18:01	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 18:01	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 18:01	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 18:01	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 18:01	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 18:01	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 18:01	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:01	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 18:01	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 18:01	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 18:01	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:01	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 18:01	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 18:01	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 18:01	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 18:01	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 18:01	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 18:01	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 18:01	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 18:01	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:01	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 18:01	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 18:01	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 18:01	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 18:01	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:01	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:01	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 18:01	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 18:01	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:01	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 18:01	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 18:01	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 18:01	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		10/05/18 18:01	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		10/05/18 18:01	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/05/18 18:01	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: MW13s-GW-092418 **Lab ID: 10449095004** Collected: 09/24/18 18:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 18:25	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 18:25	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:25	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 18:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 18:25	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:25	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:25	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:25	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 18:25	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 18:25	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:25	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:25	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 18:25	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 18:25	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 18:25	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 18:25	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 18:25	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 18:25	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 18:25	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:25	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 18:25	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:25	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 18:25	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 18:25	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 18:25	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 18:25	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:25	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 18:25	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 18:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 18:25	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 18:25	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 18:25	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 18:25	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 18:25	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 18:25	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 18:25	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 18:25	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 18:25	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 18:25	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 18:25	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 18:25	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:25	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 18:25	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 18:25	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 18:25	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 18:25	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Sample: MW13s-GW-092418 **Lab ID: 10449095004** Collected: 09/24/18 18:35 Received: 09/26/18 11:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 18:25	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 18:25	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 18:25	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 18:25	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 18:25	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 18:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 18:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 18:25	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 18:25	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 18:25	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 18:25	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 18:25	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 18:25	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 18:25	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 18:25	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 18:25	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 18:25	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 18:25	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 18:25	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 18:25	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 18:25	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 18:25	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 18:25	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 18:25	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 18:25	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 18:25	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:25	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:25	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 18:25	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 18:25	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 18:25	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 18:25	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 18:25	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 18:25	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/05/18 18:25	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		10/05/18 18:25	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/05/18 18:25	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

QC Batch: 567465 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449095001, 10449095002, 10449095003, 10449095004

METHOD BLANK: 3079299 | Matrix: Water
Associated Lab Samples: 10449095001, 10449095002, 10449095003, 10449095004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/05/18 11:35	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/05/18 11:35	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/05/18 11:35	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/05/18 11:35	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/05/18 11:35	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/05/18 11:35	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/05/18 11:35	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/05/18 11:35	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/05/18 11:35	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/05/18 11:35	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/05/18 11:35	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/05/18 11:35	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/05/18 11:35	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/05/18 11:35	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/05/18 11:35	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/05/18 11:35	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/05/18 11:35	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/05/18 11:35	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/05/18 11:35	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/05/18 11:35	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/05/18 11:35	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/05/18 11:35	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/05/18 11:35	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/05/18 11:35	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/05/18 11:35	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/05/18 11:35	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/05/18 11:35	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/05/18 11:35	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/05/18 11:35	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/05/18 11:35	
Acetone	ug/L	<9.2	20.0	9.2	10/05/18 11:35	
Acrolein	ug/L	<1.2	10.0	1.2	10/05/18 11:35	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/05/18 11:35	
Benzene	ug/L	<0.10	0.50	0.10	10/05/18 11:35	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/05/18 11:35	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/05/18 11:35	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/05/18 11:35	
Bromoform	ug/L	<0.80	4.0	0.80	10/05/18 11:35	
Bromomethane	ug/L	<1.8	4.0	1.8	10/05/18 11:35	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/05/18 11:35	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/05/18 11:35	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

METHOD BLANK: 3079299 Matrix: Water
Associated Lab Samples: 10449095001, 10449095002, 10449095003, 10449095004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/05/18 11:35	
Chloroethane	ug/L	<0.49	1.0	0.49	10/05/18 11:35	
Chloroform	ug/L	<0.45	1.0	0.45	10/05/18 11:35	
Chloromethane	ug/L	<0.16	4.0	0.16	10/05/18 11:35	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/05/18 11:35	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/05/18 11:35	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/05/18 11:35	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/05/18 11:35	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/05/18 11:35	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/05/18 11:35	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/05/18 11:35	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/05/18 11:35	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/05/18 11:35	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/05/18 11:35	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/05/18 11:35	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/05/18 11:35	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/05/18 11:35	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/05/18 11:35	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/05/18 11:35	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/05/18 11:35	
Naphthalene	ug/L	<0.48	1.0	0.48	10/05/18 11:35	
o-Xylene	ug/L	<0.16	1.0	0.16	10/05/18 11:35	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/05/18 11:35	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/05/18 11:35	
Styrene	ug/L	<0.19	1.0	0.19	10/05/18 11:35	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/05/18 11:35	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/05/18 11:35	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/05/18 11:35	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/05/18 11:35	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/05/18 11:35	
Toluene	ug/L	<0.083	0.50	0.083	10/05/18 11:35	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/05/18 11:35	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/05/18 11:35	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/05/18 11:35	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/05/18 11:35	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/05/18 11:35	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/05/18 11:35	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/05/18 11:35	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/05/18 11:35	
1,2-Dichloroethane-d4 (S)	%.	100	75-125		10/05/18 11:35	
4-Bromofluorobenzene (S)	%.	98	75-125		10/05/18 11:35	
Toluene-d8 (S)	%.	106	75-125		10/05/18 11:35	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

LABORATORY CONTROL SAMPLE: 3079300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.0	100	75-125	
1,1,1-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichloroethane	ug/L	10	10.3	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.5	95	72-125	
1,1-Dichloroethane	ug/L	10	10	100	75-125	
1,1-Dichloroethene	ug/L	10	9.8	98	73-125	
1,1-Dichloropropene	ug/L	10	9.8	98	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.8	98	72-130	
1,2,3-Trichloropropane	ug/L	10	10.1	101	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.3	93	75-125	
1,2,4-Trimethylbenzene	ug/L	10	9.3	93	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	24.4	98	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	9.4	94	75-125	
1,2-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,2-Dichloroethane	ug/L	10	9.5	95	75-125	
1,2-Dichloroethene (Total)	ug/L	20	18.9	95	75-125	N2
1,2-Dichloropropane	ug/L	10	10.2	102	75-125	
1,3,5-Trimethylbenzene	ug/L	10	9.2	92	75-125	
1,3-Dichlorobenzene	ug/L	10	10.9	109	75-125	
1,3-Dichloropropane	ug/L	10	10.3	103	75-125	
1,4-Dichlorobenzene	ug/L	10	10.5	105	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	185J	93	75-125	
2,2,4-Trimethylpentane	ug/L	10	9.7	97	64-130	N2
2,2-Dichloropropane	ug/L	10	10.3	103	68-129	
2-Butanone (MEK)	ug/L	50	48.2	96	65-126	
2-Chlorotoluene	ug/L	10	10.9	109	75-125	
2-Hexanone	ug/L	50	49.0	98	75-134	
4-Chlorotoluene	ug/L	10	9.8	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	50.6	101	75-131	
Acetone	ug/L	50	55.5	111	68-150	
Acrolein	ug/L	100	86.0	86	63-149	
Acrylonitrile	ug/L	101	99.8	99	75-125	
Benzene	ug/L	10	9.6	96	75-125	
Bromobenzene	ug/L	10	10.5	105	75-125	
Bromochloromethane	ug/L	10	9.8	98	75-125	
Bromodichloromethane	ug/L	10	10.2	102	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	8.4	84	30-145	
Carbon disulfide	ug/L	10	7.0	70	67-125	
Carbon tetrachloride	ug/L	10	10.6	106	75-125	
Chlorobenzene	ug/L	10	10.3	103	75-125	
Chloroethane	ug/L	10	10.3	103	73-131	
Chloroform	ug/L	10	9.1	91	75-125	
Chloromethane	ug/L	10	9.5	95	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.6	96	75-125	
cis-1,3-Dichloropropene	ug/L	10	9.5	95	75-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

LABORATORY CONTROL SAMPLE: 3079300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.5	105	75-125	
Dibromomethane	ug/L	10	10.2	102	75-125	
Dichlorodifluoromethane	ug/L	10	9.5	95	64-127	
Dichlorofluoromethane	ug/L	10	9.5	95	75-125	N2
Diisopropyl ether	ug/L	10	9.2	92	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.4	94	75-125	
Ethylbenzene	ug/L	10	10.1	101	75-125	
Hexachloro-1,3-butadiene	ug/L	10	11.1	111	75-130	
Isopropylbenzene (Cumene)	ug/L	10	9.4	94	75-125	
m&p-Xylene	ug/L	20	19.1	95	75-125	
Methyl-tert-butyl ether	ug/L	10	9.7	97	75-125	
Methylene Chloride	ug/L	10	9.4	94	72-125	
n-Butylbenzene	ug/L	10	9.7	97	75-125	
n-Propylbenzene	ug/L	10	9.6	96	75-125	
Naphthalene	ug/L	10	8.6	86	61-136	
o-Xylene	ug/L	10	9.4	94	75-125	
p-Isopropyltoluene	ug/L	10	9.9	99	75-125	
sec-Butylbenzene	ug/L	10	9.8	98	75-125	
Styrene	ug/L	10	9.2	92	75-125	
tert-Amylmethyl ether	ug/L	10	9.3	93	75-125	
tert-Butyl Alcohol	ug/L	100	96.3	96	75-125	
tert-Butylbenzene	ug/L	10	9.4	94	75-125	
Tetrachloroethene	ug/L	10	11.0	110	75-125	
Tetrahydrofuran	ug/L	100	99.6	100	64-150	
Toluene	ug/L	10	9.3	93	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
trans-1,3-Dichloropropene	ug/L	10	10.2	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	23.8	95	57-126	
Trichloroethene	ug/L	10	10.1	101	75-125	
Trichlorofluoromethane	ug/L	10	10.6	106	74-126	
Vinyl acetate	ug/L	10	8.9J	89	72-129	
Vinyl chloride	ug/L	10	10.1	101	71-130	
Xylene (Total)	ug/L	30	28.5	95	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079301 3079302

Parameter	Units	10449193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	19.6	100	98	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.5	20.8	107	104	75-129	3	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	18.7	19.1	94	96	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.3	20.6	102	103	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079301 3079302

Parameter	Units	10449193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.8	21.1	109	106	75-136	3	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	22.0	21.5	110	108	75-125	2	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	24.3	24.0	122	120	75-127	1	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.4	20.9	107	104	75-129	3	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.0	20.0	100	100	72-137	0	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.7	19.2	94	96	75-125	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	19.6	19.6	98	98	69-131	0	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.5	19.4	98	97	71-125	1	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	46.4	48.2	93	96	61-127	4	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.7	19.5	98	98	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.5	20.8	103	104	75-125	1	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.5	18.5	93	92	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.6	41.2	107	103	75-125	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.1	20.5	106	103	75-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.6	19.5	98	98	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.5	21.4	107	107	75-125	0	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.5	19.9	98	100	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.4	20.4	102	102	74-125	0	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	385	386	96	97	67-128	0	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.9	21.1	105	105	65-150	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.4	22.0	112	110	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	90.8	91.3	91	91	59-125	1	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.8	22.3	114	111	73-126	2	30	
2-Hexanone	ug/L	<0.88	100	100	90.4	94.5	90	94	68-138	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.9	19.9	100	100	75-125	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.1	89.9	87	90	73-125	3	30	
Acetone	ug/L	<9.2	100	100	96.7	93.4	97	93	75-150	4	30	
Acrolein	ug/L	<1.2	200	200	164	172	82	86	53-150	5	30	
Acrylonitrile	ug/L	<0.91	202	202	187	191	93	95	69-127	2	30	
Benzene	ug/L	<0.10	20	20	21.2	20.9	106	104	74-125	2	30	
Bromobenzene	ug/L	<0.21	20	20	20.7	20.5	103	102	75-125	1	30	
Bromochloromethane	ug/L	<0.27	20	20	19.8	19.7	99	98	75-125	0	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.3	19.9	102	100	75-125	2	30	
Bromoform	ug/L	<0.80	20	20	19.8	19.6	99	98	68-125	1	30	
Bromomethane	ug/L	<1.8	20	20	18.4	19.9	92	99	37-149	8	30	
Carbon disulfide	ug/L	<0.078	20	20	20.2	19.4	101	97	66-139	4	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.4	20.7	107	104	75-127	3	30	E
Chlorobenzene	ug/L	<0.17	20	20	20.6	19.9	103	99	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	20.5	21.2	102	106	73-134	4	30	
Chloroform	ug/L	<0.45	20	20	19.9	19.3	99	97	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	20.2	20.9	101	104	58-133	3	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.8	20.2	104	101	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.0	18.5	95	92	71-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.7	19.4	99	97	75-125	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079301 3079302

Parameter	Units	10449193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	20.5	20.4	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	20.9	21.7	105	109	70-150	4	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.3	20.5	97	103	75-126	6	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.7	19.0	93	95	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	18.7	91	93	74-125	2	30	
Ethylbenzene	ug/L	<0.14	20	20	22.2	21.8	111	109	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	24.2	24.9	121	124	60-150	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.8	20.5	104	102	75-125	1	30	
m&p-Xylene	ug/L	<0.31	40	40	41.5	40.3	104	101	75-125	3	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.7	19.1	93	95	75-125	2	30	
Methylene Chloride	ug/L	<0.98	20	20	18.5	18.1	91	89	72-125	2	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.1	21.1	106	106	73-140	0	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.7	20.2	104	101	75-126	3	30	
Naphthalene	ug/L	<0.48	20	20	17.5	18.3	87	92	61-136	5	30	
o-Xylene	ug/L	<0.16	20	20	19.9	19.8	99	99	75-125	0	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.5	20.9	107	105	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.3	20.9	106	104	75-132	2	30	
Styrene	ug/L	<0.19	20	20	19.4	19.5	97	98	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.2	18.4	91	92	71-125	1	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	176	181	88	91	72-130	3	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.7	20.4	103	102	75-126	1	30	
Tetrachloroethene	ug/L	<0.17	20	20	24.1	23.9	121	119	75-125	1	30	
Tetrahydrofuran	ug/L	<2.2	200	200	207	200	103	100	75-150	3	30	
Toluene	ug/L	<0.083	20	20	19.9	20.5	99	102	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.8	20.9	109	105	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.2	19.0	96	95	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	44.9	48.0	90	96	57-125	7	30	
Trichloroethene	ug/L	<0.15	20	20	20.5	19.7	103	99	75-125	4	30	E
Trichlorofluoromethane	ug/L	<0.23	20	20	20.9	21.7	104	109	75-135	4	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.3	92	92	57-136	1	30	
Vinyl chloride	ug/L	<0.092	20	20	21.8	23.0	109	115	74-141	6	30	
Xylene (Total)	ug/L	<0.31	60	60	61.4	60.1	102	100	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						100	99	75-125			
4-Bromofluorobenzene (S)	%.						98	99	75-125			
Toluene-d8 (S)	%.						97	101	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449095

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449095001	**W26-GW-092418**	EPA 8260B	567465		
10449095002	**Marlow No2-GW-092418**	EPA 8260B	567465		
10449095003	**W20-GW-092418**	EPA 8260B	567465		
10449095004	**MW13s-GW-092418**	EPA 8260B	567465		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500
Spokane, WA 99201
Email:
Phone: Fax:
Requested Due Date: ***10 Day Standard***

Section B
Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: Freeman WA-Grain Handling Facility
Project #: 1497

Section C
Invoice Information:

Attention: Anne Walsh
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

WO# : 10449095
10449095

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 T	2320 Alkali	Chloride, S	2540 TDS	TOC 5310	Sulfide 450	Methane, Eth	COD 410.4	Nitrate+Nitr		MS/MSD Req	
																		Y											
1	W26-GW-092418	WT	G	9/24	1530	—	—	—	3				X				X												001
2	MarlowNo2-GW-092418	↓	↓	↓	1630	—	—	—	3				X				X												002
3	W20-GW-092418	↓	↓	↓	1735	—	—	—	3				X				X												003
4	MW13S-GW-092418	↓	↓	↓	1835	—	—	—	3				X				X												004
5	Trip Blank-092418	↓	↓	↓	700	—	—	—	2				X				X												
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/25/18	1500	[signature] / Pace	9/26/18	1120	2.1	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature] DATE Signed: 9/24/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10449095
PM: JMG **Due Date: 10/10/18**
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7785 4472

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 1.9 **Cooler Temp Corrected (°C):** 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** br 9/26/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No MS/MSD
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12. Sample Trip Blank-092418 did not arrive
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. see exception sheet
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs are not required for 2,2,4-TMP or dichlorofluoroethane.
Brad - Trip blank was not received.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1350	Temp: 1.9	Corrected Temp: 2.1
Time: 1410	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 09/28/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce]... [th]is form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
W26-GW-092418	1	0	2	3

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449442

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449442001	**MW21D-GW-092618**	Water	09/26/18 09:00	09/28/18 10:00
10449442002	**MW16D-GW-092618**	Water	09/26/18 10:15	09/28/18 10:00
10449442003	**MW18D-GW-092618**	Water	09/26/18 11:00	09/28/18 10:00
10449442004	**MW15D-GW-092618**	Water	09/26/18 12:00	09/28/18 10:00
10449442005	**MW4D-GW-092618**	Water	09/26/18 12:45	09/28/18 10:00
10449442006	**MW17D-GW-092618**	Water	09/26/18 14:15	09/28/18 10:00
10449442007	**MW19D-GW-092618**	Water	09/26/18 15:00	09/28/18 10:00
10449442008	**MW5D-GW-092618**	Water	09/26/18 15:45	09/28/18 10:00
10449442009	**MW20D-GW-092618**	Water	09/26/18 16:45	09/28/18 10:00
10449442010	**FD3-092618**	Water	09/26/18 18:00	09/28/18 10:00
10449442011	**MW14D-GW-092618**	Water	09/26/18 17:45	09/28/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449442001	**MW21D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442002	**MW16D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442003	**MW18D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442004	**MW15D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442005	**MW4D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442006	**MW17D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442007	**MW19D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442008	**MW5D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442009	**MW20D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442010	**FD3-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449442011	**MW14D-GW-092618**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449442001	**MW21D-GW-092618**					
EPA 6010D	Aluminum, Dissolved	29.8J	ug/L	200	10/04/18 13:36	
EPA 6010D	Barium, Dissolved	79.7	ug/L	10.0	10/04/18 13:36	
EPA 6010D	Cadmium, Dissolved	0.27J	ug/L	3.0	10/04/18 13:36	
EPA 6010D	Calcium, Dissolved	25300	ug/L	500	10/04/18 13:36	
EPA 6010D	Chromium, Dissolved	0.87J	ug/L	10.0	10/04/18 13:36	
EPA 6010D	Cobalt, Dissolved	0.57J	ug/L	10.0	10/04/18 13:36	
EPA 6010D	Iron, Dissolved	231	ug/L	50.0	10/04/18 13:36	
EPA 6010D	Magnesium, Dissolved	23100	ug/L	500	10/04/18 13:36	
EPA 6010D	Manganese, Dissolved	110	ug/L	5.0	10/04/18 13:36	
EPA 6010D	Potassium, Dissolved	4500	ug/L	2500	10/04/18 13:36	
EPA 6010D	Sodium, Dissolved	24800	ug/L	1000	10/04/18 13:36	
EPA 6010D	Vanadium, Dissolved	0.45J	ug/L	15.0	10/04/18 13:36	
EPA 6010D	Zinc, Dissolved	2.6J	ug/L	20.0	10/04/18 13:36	
SM 2320B	Alkalinity, Total as CaCO3	208	mg/L	5.0	10/09/18 10:02	
SM 2540C	Total Dissolved Solids	237	mg/L	10.0	10/03/18 11:13	
EPA 300.0	Chloride	3.1	mg/L	1.2	09/28/18 15:16	
EPA 300.0	Sulfate	10.3	mg/L	1.2	09/28/18 15:16	
SM 5310C	Total Organic Carbon	1.8	mg/L	1.0	10/02/18 16:30	B
10449442002	**MW16D-GW-092618**					
EPA 6010D	Barium, Dissolved	53.8	ug/L	10.0	10/04/18 13:44	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	10/04/18 13:44	
EPA 6010D	Cadmium, Dissolved	0.40J	ug/L	3.0	10/04/18 13:44	
EPA 6010D	Calcium, Dissolved	55600	ug/L	500	10/04/18 13:44	
EPA 6010D	Chromium, Dissolved	0.65J	ug/L	10.0	10/04/18 13:44	
EPA 6010D	Cobalt, Dissolved	0.70J	ug/L	10.0	10/04/18 13:44	
EPA 6010D	Iron, Dissolved	7.3J	ug/L	50.0	10/04/18 13:44	
EPA 6010D	Magnesium, Dissolved	16800	ug/L	500	10/04/18 13:44	
EPA 6010D	Manganese, Dissolved	0.52J	ug/L	5.0	10/04/18 13:44	
EPA 6010D	Nickel, Dissolved	2.5J	ug/L	20.0	10/04/18 13:44	
EPA 6010D	Potassium, Dissolved	1270J	ug/L	2500	10/04/18 13:44	
EPA 6010D	Sodium, Dissolved	16700	ug/L	1000	10/04/18 13:44	
EPA 6010D	Vanadium, Dissolved	9.4J	ug/L	15.0	10/04/18 13:44	
EPA 6010D	Zinc, Dissolved	5.4J	ug/L	20.0	10/04/18 13:44	
SM 2320B	Alkalinity, Total as CaCO3	215	mg/L	5.0	10/09/18 11:14	
SM 2540C	Total Dissolved Solids	325	mg/L	10.0	10/03/18 14:29	D6
EPA 300.0	Chloride	5.9	mg/L	1.2	09/28/18 15:31	
EPA 300.0	Nitrate as N	5.6	mg/L	0.10	09/28/18 15:31	H1,M1
EPA 300.0	Sulfate	18.3	mg/L	1.2	09/28/18 15:31	M1
EPA 353.2	Nitrogen, NO2 plus NO3	5.4	mg/L	0.50	10/05/18 11:06	
EPA 410.4	Chemical Oxygen Demand	33.1J	mg/L	50.0	10/09/18 17:45	B,M1
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	10/02/18 17:12	B
10449442003	**MW18D-GW-092618**					
EPA 6010D	Aluminum, Dissolved	24.7J	ug/L	200	10/04/18 13:58	
EPA 6010D	Barium, Dissolved	48.0	ug/L	10.0	10/04/18 13:58	
EPA 6010D	Calcium, Dissolved	20100	ug/L	500	10/04/18 13:58	
EPA 6010D	Chromium, Dissolved	0.76J	ug/L	10.0	10/04/18 13:58	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449442003	**MW18D-GW-092618**					
EPA 6010D	Cobalt, Dissolved	0.73J	ug/L	10.0	10/04/18 13:58	
EPA 6010D	Iron, Dissolved	33.5J	ug/L	50.0	10/04/18 13:58	
EPA 6010D	Magnesium, Dissolved	14900	ug/L	500	10/04/18 13:58	
EPA 6010D	Manganese, Dissolved	41.1	ug/L	5.0	10/04/18 13:58	
EPA 6010D	Potassium, Dissolved	3710	ug/L	2500	10/04/18 13:58	
EPA 6010D	Sodium, Dissolved	17900	ug/L	1000	10/04/18 13:58	
EPA 6010D	Vanadium, Dissolved	0.34J	ug/L	15.0	10/04/18 13:58	
EPA 6010D	Zinc, Dissolved	2.6J	ug/L	20.0	10/04/18 13:58	
SM 2320B	Alkalinity, Total as CaCO3	155	mg/L	5.0	10/09/18 10:17	
SM 2540C	Total Dissolved Solids	196	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	2.4	mg/L	1.2	09/28/18 15:01	
EPA 300.0	Sulfate	7.7	mg/L	1.2	09/28/18 15:01	
EPA 410.4	Chemical Oxygen Demand	24.5J	mg/L	50.0	10/09/18 17:45	B
SM 5310C	Total Organic Carbon	0.67J	mg/L	1.0	10/01/18 23:13	B
10449442004	**MW15D-GW-092618**					
EPA 6010D	Barium, Dissolved	10J	ug/L	10.0	10/04/18 14:00	
EPA 6010D	Calcium, Dissolved	36700	ug/L	500	10/04/18 14:00	
EPA 6010D	Cobalt, Dissolved	0.62J	ug/L	10.0	10/04/18 14:00	
EPA 6010D	Iron, Dissolved	5.6J	ug/L	50.0	10/04/18 14:00	
EPA 6010D	Magnesium, Dissolved	13900	ug/L	500	10/04/18 14:00	
EPA 6010D	Manganese, Dissolved	0.41J	ug/L	5.0	10/04/18 14:00	
EPA 6010D	Potassium, Dissolved	2560	ug/L	2500	10/04/18 14:00	
EPA 6010D	Sodium, Dissolved	14800	ug/L	1000	10/04/18 14:00	
EPA 6010D	Vanadium, Dissolved	10.0J	ug/L	15.0	10/04/18 14:00	
SM 2320B	Alkalinity, Total as CaCO3	177	mg/L	5.0	10/09/18 11:28	
SM 2540C	Total Dissolved Solids	245	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	3.0	mg/L	1.2	09/28/18 14:46	
EPA 300.0	Nitrate as N	2.0	mg/L	0.10	09/28/18 14:46	H1
EPA 300.0	Sulfate	6.8	mg/L	1.2	09/28/18 14:46	
EPA 353.2	Nitrogen, NO2 plus NO3	2.1	mg/L	0.20	10/04/18 12:05	
EPA 410.4	Chemical Oxygen Demand	27.4J	mg/L	50.0	10/09/18 17:45	B
SM 5310C	Total Organic Carbon	0.86J	mg/L	1.0	10/01/18 23:28	B
10449442005	**MW4D-GW-092618**					
EPA 6010D	Barium, Dissolved	55.9	ug/L	10.0	10/04/18 14:01	
EPA 6010D	Cadmium, Dissolved	0.35J	ug/L	3.0	10/04/18 14:01	
EPA 6010D	Calcium, Dissolved	36100	ug/L	500	10/04/18 14:01	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	10/04/18 14:01	
EPA 6010D	Iron, Dissolved	31.1J	ug/L	50.0	10/04/18 14:01	
EPA 6010D	Magnesium, Dissolved	12000	ug/L	500	10/04/18 14:01	
EPA 6010D	Manganese, Dissolved	14.4	ug/L	5.0	10/04/18 14:01	
EPA 6010D	Nickel, Dissolved	11.3J	ug/L	20.0	10/04/18 14:01	
EPA 6010D	Potassium, Dissolved	2730	ug/L	2500	10/04/18 14:01	
EPA 6010D	Sodium, Dissolved	22900	ug/L	1000	10/04/18 14:01	
EPA 6010D	Vanadium, Dissolved	8.6J	ug/L	15.0	10/04/18 14:01	
EPA 6010D	Zinc, Dissolved	7.5J	ug/L	20.0	10/04/18 14:01	
SM 2320B	Alkalinity, Total as CaCO3	165	mg/L	5.0	10/09/18 11:44	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449442005	**MW4D-GW-092618**					
SM 2540C	Total Dissolved Solids	262	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	17.2	mg/L	1.2	09/28/18 12:30	
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	09/28/18 12:30	
EPA 300.0	Sulfate	10.3	mg/L	1.2	09/28/18 12:30	
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	10/04/18 11:59	
EPA 410.4	Chemical Oxygen Demand	28.8J	mg/L	50.0	10/09/18 17:46	B
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	10/01/18 23:42	B
10449442006	**MW17D-GW-092618**					
RSK 175	Ethene	5.4J	ug/L	10.0	10/01/18 12:52	
EPA 6010D	Arsenic, Dissolved	4.0J	ug/L	20.0	10/04/18 14:03	
EPA 6010D	Barium, Dissolved	78.9	ug/L	10.0	10/04/18 14:03	
EPA 6010D	Calcium, Dissolved	40000	ug/L	500	10/04/18 14:03	
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	10/04/18 14:03	
EPA 6010D	Iron, Dissolved	507	ug/L	50.0	10/04/18 14:03	
EPA 6010D	Magnesium, Dissolved	18100	ug/L	500	10/04/18 14:03	
EPA 6010D	Manganese, Dissolved	207	ug/L	5.0	10/04/18 14:03	
EPA 6010D	Potassium, Dissolved	11900	ug/L	2500	10/04/18 14:03	
EPA 6010D	Sodium, Dissolved	44900	ug/L	1000	10/04/18 14:03	
EPA 6010D	Vanadium, Dissolved	1.3J	ug/L	15.0	10/04/18 14:03	
EPA 6010D	Zinc, Dissolved	3.1J	ug/L	20.0	10/04/18 14:03	
SM 2320B	Alkalinity, Total as CaCO3	199	mg/L	5.0	10/09/18 11:56	
SM 2540C	Total Dissolved Solids	398	mg/L	10.0	10/03/18 14:29	
SM 4500-S-2 D	Sulfide, Total	0.032	mg/L	0.020	10/02/18 12:39	
EPA 300.0	Chloride	30.8	mg/L	1.2	09/28/18 12:45	
EPA 300.0	Sulfate	75.8	mg/L	1.2	09/28/18 12:45	
EPA 410.4	Chemical Oxygen Demand	59.3	mg/L	50.0	10/09/18 17:46	B
SM 5310C	Total Organic Carbon	9.4	mg/L	1.0	10/01/18 23:57	
10449442007	**MW19D-GW-092618**					
EPA 6010D	Barium, Dissolved	9.4J	ug/L	10.0	10/04/18 14:05	
EPA 6010D	Calcium, Dissolved	39000	ug/L	500	10/04/18 14:05	
EPA 6010D	Cobalt, Dissolved	0.53J	ug/L	10.0	10/04/18 14:05	
EPA 6010D	Iron, Dissolved	5.3J	ug/L	50.0	10/04/18 14:05	
EPA 6010D	Magnesium, Dissolved	17400	ug/L	500	10/04/18 14:05	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	10/04/18 14:05	
EPA 6010D	Potassium, Dissolved	4170	ug/L	2500	10/04/18 14:05	
EPA 6010D	Sodium, Dissolved	13700	ug/L	1000	10/04/18 14:05	
EPA 6010D	Vanadium, Dissolved	6.0J	ug/L	15.0	10/04/18 14:05	
EPA 6010D	Zinc, Dissolved	3.4J	ug/L	20.0	10/04/18 14:05	
SM 2320B	Alkalinity, Total as CaCO3	169	mg/L	5.0	10/09/18 12:01	
SM 2540C	Total Dissolved Solids	280	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	7.1	mg/L	1.2	09/28/18 13:30	
EPA 300.0	Nitrate as N	4.6	mg/L	0.10	09/28/18 13:30	
EPA 300.0	Sulfate	23.4	mg/L	1.2	09/28/18 13:30	
EPA 353.2	Nitrogen, NO2 plus NO3	4.5	mg/L	0.50	10/05/18 11:10	
EPA 410.4	Chemical Oxygen Demand	29.1J	mg/L	50.0	10/09/18 17:46	B
SM 5310C	Total Organic Carbon	0.75J	mg/L	2.0	10/02/18 18:22	B

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449442008	**MW5D-GW-092618**					
EPA 6010D	Aluminum, Dissolved	15.9J	ug/L	200	10/04/18 14:06	
EPA 6010D	Barium, Dissolved	92.8	ug/L	10.0	10/04/18 14:06	
EPA 6010D	Cadmium, Dissolved	0.28J	ug/L	3.0	10/04/18 14:06	
EPA 6010D	Calcium, Dissolved	46500	ug/L	500	10/04/18 14:06	
EPA 6010D	Chromium, Dissolved	0.77J	ug/L	10.0	10/04/18 14:06	
EPA 6010D	Iron, Dissolved	9.6J	ug/L	50.0	10/04/18 14:06	
EPA 6010D	Magnesium, Dissolved	14100	ug/L	500	10/04/18 14:06	
EPA 6010D	Manganese, Dissolved	0.72J	ug/L	5.0	10/04/18 14:06	
EPA 6010D	Potassium, Dissolved	1220J	ug/L	2500	10/04/18 14:06	
EPA 6010D	Sodium, Dissolved	15900	ug/L	1000	10/04/18 14:06	
EPA 6010D	Vanadium, Dissolved	6.8J	ug/L	15.0	10/04/18 14:06	
EPA 6010D	Zinc, Dissolved	4.2J	ug/L	20.0	10/04/18 14:06	
SM 2320B	Alkalinity, Total as CaCO3	216	mg/L	5.0	10/09/18 12:06	
SM 2540C	Total Dissolved Solids	261	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	1.1J	mg/L	1.2	09/28/18 13:46	
EPA 300.0	Nitrate as N	0.18	mg/L	0.10	09/28/18 13:46	
EPA 300.0	Sulfate	1.7	mg/L	1.2	09/28/18 13:46	
EPA 353.2	Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	10/05/18 10:24	
EPA 410.4	Chemical Oxygen Demand	29.0J	mg/L	50.0	10/09/18 17:46	B
SM 5310C	Total Organic Carbon	2.1	mg/L	1.0	10/02/18 02:03	B
10449442009	**MW20D-GW-092618**					
EPA 6010D	Barium, Dissolved	18.0	ug/L	10.0	10/04/18 14:08	
EPA 6010D	Calcium, Dissolved	55800	ug/L	500	10/04/18 14:08	
EPA 6010D	Cobalt, Dissolved	0.75J	ug/L	10.0	10/04/18 14:08	
EPA 6010D	Iron, Dissolved	8.9J	ug/L	50.0	10/04/18 14:08	
EPA 6010D	Magnesium, Dissolved	21100	ug/L	500	10/04/18 14:08	
EPA 6010D	Manganese, Dissolved	4.2J	ug/L	5.0	10/04/18 14:08	
EPA 6010D	Potassium, Dissolved	3470	ug/L	2500	10/04/18 14:08	
EPA 6010D	Sodium, Dissolved	18600	ug/L	1000	10/04/18 14:08	
EPA 6010D	Vanadium, Dissolved	5.2J	ug/L	15.0	10/04/18 14:08	
EPA 6010D	Zinc, Dissolved	3.0J	ug/L	20.0	10/04/18 14:08	
SM 2320B	Alkalinity, Total as CaCO3	263	mg/L	5.0	10/09/18 12:09	
SM 2540C	Total Dissolved Solids	316	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	5.7	mg/L	1.2	09/28/18 14:01	
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	09/28/18 14:01	
EPA 300.0	Sulfate	7.7	mg/L	1.2	09/28/18 14:01	
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	10/05/18 10:25	
EPA 410.4	Chemical Oxygen Demand	36.2J	mg/L	50.0	10/09/18 17:47	B
SM 5310C	Total Organic Carbon	0.96J	mg/L	1.0	10/02/18 02:17	B
10449442010	**FD3-092618**					
EPA 6010D	Barium, Dissolved	17.8	ug/L	10.0	10/04/18 14:10	
EPA 6010D	Calcium, Dissolved	55800	ug/L	500	10/04/18 14:10	
EPA 6010D	Magnesium, Dissolved	21100	ug/L	500	10/04/18 14:10	
EPA 6010D	Manganese, Dissolved	4.6J	ug/L	5.0	10/04/18 14:10	
EPA 6010D	Potassium, Dissolved	3420	ug/L	2500	10/04/18 14:10	
EPA 6010D	Sodium, Dissolved	18600	ug/L	1000	10/04/18 14:10	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449442010	**FD3-092618**					
EPA 6010D	Vanadium, Dissolved	5.0J	ug/L	15.0	10/04/18 14:10	
EPA 6010D	Zinc, Dissolved	2.6J	ug/L	20.0	10/04/18 14:10	
SM 2320B	Alkalinity, Total as CaCO3	261	mg/L	5.0	10/09/18 12:13	
SM 2540C	Total Dissolved Solids	332	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	5.7	mg/L	1.2	09/28/18 14:16	
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	09/28/18 14:16	
EPA 300.0	Sulfate	7.6	mg/L	1.2	09/28/18 14:16	
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	10/05/18 10:26	
EPA 410.4	Chemical Oxygen Demand	31.7J	mg/L	50.0	10/09/18 17:47	B
SM 5310C	Total Organic Carbon	0.86J	mg/L	1.0	10/02/18 02:31	B
10449442011	**MW14D-GW-092618**					
RSK 175	Methane	5.5J	ug/L	10.0	10/01/18 14:12	
EPA 6010D	Barium, Dissolved	28.0	ug/L	10.0	10/04/18 14:11	
EPA 6010D	Cadmium, Dissolved	0.33J	ug/L	3.0	10/04/18 14:11	
EPA 6010D	Calcium, Dissolved	26200	ug/L	500	10/04/18 14:11	
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	10/04/18 14:11	
EPA 6010D	Iron, Dissolved	469	ug/L	50.0	10/04/18 14:11	
EPA 6010D	Magnesium, Dissolved	8100	ug/L	500	10/04/18 14:11	
EPA 6010D	Manganese, Dissolved	501	ug/L	5.0	10/04/18 14:11	
EPA 6010D	Sodium, Dissolved	24800	ug/L	1000	10/04/18 14:11	
EPA 6010D	Vanadium, Dissolved	4.1J	ug/L	15.0	10/04/18 14:11	
EPA 6010D	Zinc, Dissolved	4.4J	ug/L	20.0	10/04/18 14:11	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	10/09/18 12:17	
SM 2540C	Total Dissolved Solids	212	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	1.7	mg/L	1.2	09/28/18 14:31	
EPA 300.0	Nitrate as N	0.065J	mg/L	0.10	09/28/18 14:31	
EPA 300.0	Sulfate	2.4	mg/L	1.2	09/28/18 14:31	
EPA 353.2	Nitrogen, NO2 plus NO3	0.043J	mg/L	0.10	10/05/18 10:27	
EPA 410.4	Chemical Oxygen Demand	42.4J	mg/L	50.0	10/09/18 17:47	B
SM 5310C	Total Organic Carbon	3.4	mg/L	1.0	10/02/18 02:45	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568003

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3082469)
  - Alkalinity, Total as CaCO3

Additional Comments:

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(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 566833

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 3075544)
  - Total Dissolved Solids

QC Batch: 566834

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 3075548)
  - Total Dissolved Solids

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 121949

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 525790)
  - Sulfide, Total
- MS (Lab ID: 525792)
  - Sulfide, Total

QC Batch: 121973

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 525903)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- MW15D-GW-092618 (Lab ID: 10449442004)
- MW16D-GW-092618 (Lab ID: 10449442002)
- MW18D-GW-092618 (Lab ID: 10449442003)

H3: Sample was received or analysis requested beyond the recognized method holding time.
- MW21D-GW-092618 (Lab ID: 10449442001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 566009

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10449442001,10449442002,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3071265)
  - Nitrate as N
  - Sulfate
- MS (Lab ID: 3071267)
  - Nitrate as N
- MSD (Lab ID: 3071266)
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 3071268)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567424

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3079207)
    - Nitrogen, NO2 plus NO3
- MS (Lab ID: 3079209)
    - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079208)
    - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079210)
    - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 568045

B: Analyte was detected in the associated method blank.
- BLANK for HBN 568045 [WETA/370 (Lab ID: 3082624)
  - Chemical Oxygen Demand

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568045

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449442002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3082628)
  - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
11 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 153375

B: Analyte was detected in the associated method blank.
- BLANK for HBN 153375 [WETA/251 (Lab ID: 606749)
  - Total Organic Carbon

QC Batch: 153378

B: Analyte was detected in the associated method blank.
- BLANK for HBN 153378 [WETA/251 (Lab ID: 606762)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW21D-GW-092618 **Lab ID: 10449442001** Collected: 09/26/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:09	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 12:09	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:09	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**29.8J**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 13:36	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 13:36	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 13:36	7440-38-2	
Barium, Dissolved	**79.7**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 13:36	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 13:36	7440-41-7	
Cadmium, Dissolved	**0.27J**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 13:36	7440-43-9	
Calcium, Dissolved	**25300**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 13:36	7440-70-2	
Chromium, Dissolved	**0.87J**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 13:36	7440-47-3	
Cobalt, Dissolved	**0.57J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 13:36	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 13:36	7440-50-8	
Iron, Dissolved	**231**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 13:36	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 13:36	7439-92-1	
Magnesium, Dissolved	**23100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 13:36	7439-95-4	
Manganese, Dissolved	**110**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 13:36	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 13:36	7440-02-0	
Potassium, Dissolved	**4500**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 13:36	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 13:36	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 13:36	7440-22-4	
Sodium, Dissolved	**24800**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 13:36	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 13:36	7440-28-0	
Vanadium, Dissolved	**0.45J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 13:36	7440-62-2	
Zinc, Dissolved	**2.6J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 13:36	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 16:37	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**208**	mg/L	5.0	1.0	1		10/09/18 10:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**237**	mg/L	10.0	5.0	1		10/03/18 11:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:00	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.1**	mg/L	1.2	0.28	1		09/28/18 15:16	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		09/28/18 15:16	14797-55-8	H3
Sulfate	**10.3**	mg/L	1.2	0.19	1		09/28/18 15:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW21D-GW-092618 **Lab ID: 10449442001** Collected: 09/26/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.018**	mg/L	0.10	0.018	1		10/04/18 11:51		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:44		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.20	1		10/02/18 16:30	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW16D-GW-092618 **Lab ID: 10449442002** Collected: 09/26/18 10:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 13:43	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 13:43	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 13:43	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 13:44	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 13:44	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 13:44	7440-38-2	
Barium, Dissolved	**53.8**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 13:44	7440-39-3	
Beryllium, Dissolved	**0.19J**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 13:44	7440-41-7	
Cadmium, Dissolved	**0.40J**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 13:44	7440-43-9	
Calcium, Dissolved	**55600**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 13:44	7440-70-2	
Chromium, Dissolved	**0.65J**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 13:44	7440-47-3	
Cobalt, Dissolved	**0.70J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 13:44	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 13:44	7440-50-8	
Iron, Dissolved	**7.3J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 13:44	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 13:44	7439-92-1	
Magnesium, Dissolved	**16800**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 13:44	7439-95-4	
Manganese, Dissolved	**0.52J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 13:44	7439-96-5	
Nickel, Dissolved	**2.5J**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 13:44	7440-02-0	
Potassium, Dissolved	**1270J**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 13:44	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 13:44	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 13:44	7440-22-4	
Sodium, Dissolved	**16700**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 13:44	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 13:44	7440-28-0	
Vanadium, Dissolved	**9.4J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 13:44	7440-62-2	
Zinc, Dissolved	**5.4J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 13:44	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 16:44	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**215**	mg/L	5.0	1.0	1		10/09/18 11:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**325**	mg/L	10.0	5.0	1		10/03/18 14:29		D6
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:37	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.9**	mg/L	1.2	0.28	1		09/28/18 15:31	16887-00-6	
Nitrate as N	**5.6**	mg/L	0.10	0.015	1		09/28/18 15:31	14797-55-8	H1,M1
Sulfate	**18.3**	mg/L	1.2	0.19	1		09/28/18 15:31	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW16D-GW-092618 **Lab ID: 10449442002** Collected: 09/26/18 10:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.4**	mg/L	0.50	0.088	5		10/05/18 11:06		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**33.1J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:45		B,M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.2**	mg/L	1.0	0.20	1		10/02/18 17:12	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW18D-GW-092618 **Lab ID: 10449442003** Collected: 09/26/18 11:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:31	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 12:31	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:31	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**24.7J**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 13:58	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 13:58	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 13:58	7440-38-2	
Barium, Dissolved	**48.0**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 13:58	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 13:58	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 13:58	7440-43-9	
Calcium, Dissolved	**20100**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 13:58	7440-70-2	
Chromium, Dissolved	**0.76J**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 13:58	7440-47-3	
Cobalt, Dissolved	**0.73J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 13:58	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 13:58	7440-50-8	
Iron, Dissolved	**33.5J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 13:58	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 13:58	7439-92-1	
Magnesium, Dissolved	**14900**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 13:58	7439-95-4	
Manganese, Dissolved	**41.1**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 13:58	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 13:58	7440-02-0	
Potassium, Dissolved	**3710**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 13:58	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 13:58	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 13:58	7440-22-4	
Sodium, Dissolved	**17900**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 13:58	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 13:58	7440-28-0	
Vanadium, Dissolved	**0.34J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 13:58	7440-62-2	
Zinc, Dissolved	**2.6J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 13:58	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 16:51	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**155**	mg/L	5.0	1.0	1		10/09/18 10:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**196**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:02	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.2	0.28	1		09/28/18 15:01	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		09/28/18 15:01	14797-55-8	H1
Sulfate	**7.7**	mg/L	1.2	0.19	1		09/28/18 15:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW18D-GW-092618 **Lab ID: 10449442003** Collected: 09/26/18 11:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.018**	mg/L	0.10	0.018	1		10/04/18 11:55		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**24.5J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:45		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.67J**	mg/L	1.0	0.20	1		10/01/18 23:13	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW15D-GW-092618 **Lab ID: 10449442004** Collected: 09/26/18 12:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:38	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 12:38	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:38	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:00	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:00	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:00	7440-38-2	
Barium, Dissolved	**10J**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:00	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:00	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:00	7440-43-9	
Calcium, Dissolved	**36700**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:00	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:00	7440-47-3	
Cobalt, Dissolved	**0.62J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:00	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:00	7440-50-8	
Iron, Dissolved	**5.6J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:00	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:00	7439-92-1	
Magnesium, Dissolved	**13900**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:00	7439-95-4	
Manganese, Dissolved	**0.41J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:00	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:00	7440-02-0	
Potassium, Dissolved	**2560**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:00	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:00	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:00	7440-22-4	
Sodium, Dissolved	**14800**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:00	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:00	7440-28-0	
Vanadium, Dissolved	**10.0J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:00	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:00	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 16:53	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**177**	mg/L	5.0	1.0	1		10/09/18 11:28		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**245**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:02	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.0**	mg/L	1.2	0.28	1		09/28/18 14:46	16887-00-6	
Nitrate as N	**2.0**	mg/L	0.10	0.015	1		09/28/18 14:46	14797-55-8	H1
Sulfate	**6.8**	mg/L	1.2	0.19	1		09/28/18 14:46	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW15D-GW-092618 **Lab ID: 10449442004** Collected: 09/26/18 12:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.1**	mg/L	0.20	0.035	2		10/04/18 12:05		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**27.4J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:45		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.86J**	mg/L	1.0	0.20	1		10/01/18 23:28	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW4D-GW-092618 **Lab ID: 10449442005** Collected: 09/26/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:45	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 12:45	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:45	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:01	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:01	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:01	7440-38-2	
Barium, Dissolved	**55.9**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:01	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:01	7440-41-7	
Cadmium, Dissolved	**0.35J**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:01	7440-43-9	
Calcium, Dissolved	**36100**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:01	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:01	7440-47-3	
Cobalt, Dissolved	**1.4J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:01	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:01	7440-50-8	
Iron, Dissolved	**31.1J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:01	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:01	7439-92-1	
Magnesium, Dissolved	**12000**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:01	7439-95-4	
Manganese, Dissolved	**14.4**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:01	7439-96-5	
Nickel, Dissolved	**11.3J**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:01	7440-02-0	
Potassium, Dissolved	**2730**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:01	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:01	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:01	7440-22-4	
Sodium, Dissolved	**22900**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:01	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:01	7440-28-0	
Vanadium, Dissolved	**8.6J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:01	7440-62-2	
Zinc, Dissolved	**7.5J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:01	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:00	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**165**	mg/L	5.0	1.0	1		10/09/18 11:44		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**262**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:04	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**17.2**	mg/L	1.2	0.28	1		09/28/18 12:30	16887-00-6	
Nitrate as N	**1.2**	mg/L	0.10	0.015	1		09/28/18 12:30	14797-55-8	
Sulfate	**10.3**	mg/L	1.2	0.19	1		09/28/18 12:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW4D-GW-092618 **Lab ID: 10449442005** Collected: 09/26/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.2**	mg/L	0.10	0.018	1		10/04/18 11:59		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**28.8J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:46		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.20	1		10/01/18 23:42	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW17D-GW-092618 **Lab ID: 10449442006** Collected: 09/26/18 14:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:52	74-84-0	
Ethene	**5.4J**	ug/L	10.0	2.9	1		10/01/18 12:52	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:52	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:03	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:03	7440-36-0	
Arsenic, Dissolved	**4.0J**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:03	7440-38-2	
Barium, Dissolved	**78.9**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:03	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:03	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:03	7440-43-9	
Calcium, Dissolved	**40000**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:03	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:03	7440-47-3	
Cobalt, Dissolved	**1.2J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:03	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:03	7440-50-8	
Iron, Dissolved	**507**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:03	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:03	7439-92-1	
Magnesium, Dissolved	**18100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:03	7439-95-4	
Manganese, Dissolved	**207**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:03	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:03	7440-02-0	
Potassium, Dissolved	**11900**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:03	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:03	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:03	7440-22-4	
Sodium, Dissolved	**44900**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:03	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:03	7440-28-0	
Vanadium, Dissolved	**1.3J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:03	7440-62-2	
Zinc, Dissolved	**3.1J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:03	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:02	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**199**	mg/L	5.0	1.0	1		10/09/18 11:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**398**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.032**	mg/L	0.020	0.0054	1		10/02/18 12:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**30.8**	mg/L	1.2	0.28	1		09/28/18 12:45	16887-00-6	
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		09/28/18 12:45	14797-55-8	
Sulfate	**75.8**	mg/L	1.2	0.19	1		09/28/18 12:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW17D-GW-092618 **Lab ID: 10449442006** Collected: 09/26/18 14:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.018**	mg/L	0.10	0.018	1		10/04/18 12:00		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**59.3**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:46		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**9.4**	mg/L	1.0	0.20	1		10/01/18 23:57	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW19D-GW-092618 **Lab ID: 10449442007** Collected: 09/26/18 15:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 12:59	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 12:59	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 12:59	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:05	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:05	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:05	7440-38-2	
Barium, Dissolved	**9.4J**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:05	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:05	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:05	7440-43-9	
Calcium, Dissolved	**39000**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:05	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:05	7440-47-3	
Cobalt, Dissolved	**0.53J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:05	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:05	7440-50-8	
Iron, Dissolved	**5.3J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:05	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:05	7439-92-1	
Magnesium, Dissolved	**17400**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:05	7439-95-4	
Manganese, Dissolved	**1.1J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:05	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:05	7440-02-0	
Potassium, Dissolved	**4170**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:05	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:05	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:05	7440-22-4	
Sodium, Dissolved	**13700**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:05	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:05	7440-28-0	
Vanadium, Dissolved	**6.0J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:05	7440-62-2	
Zinc, Dissolved	**3.4J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:05	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:05	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**169**	mg/L	5.0	1.0	1		10/09/18 12:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**280**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:40	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.1**	mg/L	1.2	0.28	1		09/28/18 13:30	16887-00-6	
Nitrate as N	**4.6**	mg/L	0.10	0.015	1		09/28/18 13:30	14797-55-8	
Sulfate	**23.4**	mg/L	1.2	0.19	1		09/28/18 13:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW19D-GW-092618 **Lab ID: 10449442007** Collected: 09/26/18 15:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.5**	mg/L	0.50	0.088	5		10/05/18 11:10		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**29.1J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:46		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.75J**	mg/L	2.0	0.40	2		10/02/18 18:22	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW5D-GW-092618 **Lab ID: 10449442008** Collected: 09/26/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 13:07	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 13:07	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 13:07	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**15.9J**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:06	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:06	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:06	7440-38-2	
Barium, Dissolved	**92.8**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:06	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:06	7440-41-7	
Cadmium, Dissolved	**0.28J**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:06	7440-43-9	
Calcium, Dissolved	**46500**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:06	7440-70-2	
Chromium, Dissolved	**0.77J**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:06	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:06	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:06	7440-50-8	
Iron, Dissolved	**9.6J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:06	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:06	7439-92-1	
Magnesium, Dissolved	**14100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:06	7439-95-4	
Manganese, Dissolved	**0.72J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:06	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:06	7440-02-0	
Potassium, Dissolved	**1220J**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:06	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:06	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:06	7440-22-4	
Sodium, Dissolved	**15900**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:06	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:06	7440-28-0	
Vanadium, Dissolved	**6.8J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:06	7440-62-2	
Zinc, Dissolved	**4.2J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:06	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:07	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**216**	mg/L	5.0	1.0	1		10/09/18 12:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**261**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:58	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.1J**	mg/L	1.2	0.28	1		09/28/18 13:46	16887-00-6	
Nitrate as N	**0.18**	mg/L	0.10	0.015	1		09/28/18 13:46	14797-55-8	
Sulfate	**1.7**	mg/L	1.2	0.19	1		09/28/18 13:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449442

Sample: MW5D-GW-092618 **Lab ID: 10449442008** Collected: 09/26/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.20**	mg/L	0.10	0.018	1		10/05/18 10:24		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**29.0J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:46		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.1**	mg/L	1.0	0.20	1		10/02/18 02:03	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW20D-GW-092618 **Lab ID: 10449442009** Collected: 09/26/18 16:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 13:14	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 13:14	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 13:14	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:08	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:08	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:08	7440-38-2	
Barium, Dissolved	**18.0**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:08	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:08	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:08	7440-43-9	
Calcium, Dissolved	**55800**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:08	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:08	7440-47-3	
Cobalt, Dissolved	**0.75J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:08	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:08	7440-50-8	
Iron, Dissolved	**8.9J**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:08	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:08	7439-92-1	
Magnesium, Dissolved	**21100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:08	7439-95-4	
Manganese, Dissolved	**4.2J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:08	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:08	7440-02-0	
Potassium, Dissolved	**3470**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:08	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:08	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:08	7440-22-4	
Sodium, Dissolved	**18600**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:08	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:08	7440-28-0	
Vanadium, Dissolved	**5.2J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:08	7440-62-2	
Zinc, Dissolved	**3.0J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:08	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:09	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**263**	mg/L	5.0	1.0	1		10/09/18 12:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**316**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 12:59	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.7**	mg/L	1.2	0.28	1		09/28/18 14:01	16887-00-6	
Nitrate as N	**1.2**	mg/L	0.10	0.015	1		09/28/18 14:01	14797-55-8	
Sulfate	**7.7**	mg/L	1.2	0.19	1		09/28/18 14:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW20D-GW-092618 **Lab ID: 10449442009** Collected: 09/26/18 16:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.2**	mg/L	0.10	0.018	1		10/05/18 10:25		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**36.2J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:47		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.96J**	mg/L	1.0	0.20	1		10/02/18 02:17	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: FD3-092618 **Lab ID: 10449442010** Collected: 09/26/18 18:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 14:04	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 14:04	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 14:04	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:10	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:10	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:10	7440-38-2	
Barium, Dissolved	**17.8**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:10	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:10	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:10	7440-43-9	
Calcium, Dissolved	**55800**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:10	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:10	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:10	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:10	7440-50-8	
Iron, Dissolved	**<4.3**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:10	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:10	7439-92-1	
Magnesium, Dissolved	**21100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:10	7439-95-4	
Manganese, Dissolved	**4.6J**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:10	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:10	7440-02-0	
Potassium, Dissolved	**3420**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:10	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:10	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:10	7440-22-4	
Sodium, Dissolved	**18600**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:10	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:10	7440-28-0	
Vanadium, Dissolved	**5.0J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:10	7440-62-2	
Zinc, Dissolved	**2.6J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:10	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:11	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**261**	mg/L	5.0	1.0	1		10/09/18 12:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**332**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:02	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**5.7**	mg/L	1.2	0.28	1		09/28/18 14:16	16887-00-6	
Nitrate as N	**1.2**	mg/L	0.10	0.015	1		09/28/18 14:16	14797-55-8	
Sulfate	**7.6**	mg/L	1.2	0.19	1		09/28/18 14:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: FD3-092618 **Lab ID: 10449442010** Collected: 09/26/18 18:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.2**	mg/L	0.10	0.018	1		10/05/18 10:26		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**31.7J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:47		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.86J**	mg/L	1.0	0.20	1		10/02/18 02:31	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW14D-GW-092618 **Lab ID: 10449442011** Collected: 09/26/18 17:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 14:12	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 14:12	74-85-1	
Methane	**5.5J**	ug/L	10.0	4.9	1		10/01/18 14:12	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:15	10/04/18 14:11	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:15	10/04/18 14:11	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:15	10/04/18 14:11	7440-38-2	
Barium, Dissolved	**28.0**	ug/L	10.0	0.18	1	10/02/18 14:15	10/04/18 14:11	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:15	10/04/18 14:11	7440-41-7	
Cadmium, Dissolved	**0.33J**	ug/L	3.0	0.26	1	10/02/18 14:15	10/04/18 14:11	7440-43-9	
Calcium, Dissolved	**26200**	ug/L	500	13.9	1	10/02/18 14:15	10/04/18 14:11	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:15	10/04/18 14:11	7440-47-3	
Cobalt, Dissolved	**1.5J**	ug/L	10.0	0.50	1	10/02/18 14:15	10/04/18 14:11	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:15	10/04/18 14:11	7440-50-8	
Iron, Dissolved	**469**	ug/L	50.0	4.3	1	10/02/18 14:15	10/04/18 14:11	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:15	10/04/18 14:11	7439-92-1	
Magnesium, Dissolved	**8100**	ug/L	500	9.8	1	10/02/18 14:15	10/04/18 14:11	7439-95-4	
Manganese, Dissolved	**501**	ug/L	5.0	0.22	1	10/02/18 14:15	10/04/18 14:11	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:15	10/04/18 14:11	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	10/02/18 14:15	10/04/18 14:11	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:15	10/04/18 14:11	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:15	10/04/18 14:11	7440-22-4	
Sodium, Dissolved	**24800**	ug/L	1000	21.5	1	10/02/18 14:15	10/04/18 14:11	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:15	10/04/18 14:11	7440-28-0	
Vanadium, Dissolved	**4.1J**	ug/L	15.0	0.29	1	10/02/18 14:15	10/04/18 14:11	7440-62-2	
Zinc, Dissolved	**4.4J**	ug/L	20.0	2.5	1	10/02/18 14:15	10/04/18 14:11	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 17:54	10/08/18 17:14	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**154**	mg/L	5.0	1.0	1		10/09/18 12:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**212**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:03	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.7**	mg/L	1.2	0.28	1		09/28/18 14:31	16887-00-6	
Nitrate as N	**0.065J**	mg/L	0.10	0.015	1		09/28/18 14:31	14797-55-8	
Sulfate	**2.4**	mg/L	1.2	0.19	1		09/28/18 14:31	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Sample: MW14D-GW-092618 **Lab ID: 10449442011** Collected: 09/26/18 17:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.043J**	mg/L	0.10	0.018	1		10/05/18 10:27		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**42.4J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:47		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.4**	mg/L	1.0	0.20	1		10/02/18 02:45	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566104 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3071911 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	10/01/18 11:57	
Ethene	ug/L	<2.9	10.0	2.9	10/01/18 11:57	
Methane	ug/L	<4.9	10.0	4.9	10/01/18 11:57	

LABORATORY CONTROL SAMPLE & LCSD: 3071912 3071913

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	110	108	97	95	85-115	2	20	
Ethene	ug/L	106	104	102	98	96	85-115	2	20	
Methane	ug/L	60.7	60.2	58.8	99	97	85-115	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071914 3071915

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	78.5	147	69	129	30-150	60	20	R1
Ethene	ug/L	<2.9	106	106	75.0	138	70	130	30-150	59	20	R1
Methane	ug/L	<4.9	60.7	60.7	42.8	80.4	67	129	30-150	61	20	R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071916 3071917

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	121	125	106	110	30-150	3	20	
Ethene	ug/L	<2.9	106	106	114	118	108	111	30-150	3	20	
Methane	ug/L	<4.9	60.7	60.7	65.4	67.5	106	109	30-150	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566256 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3072839 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	10/08/18 16:33	

LABORATORY CONTROL SAMPLE: 3072840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072841 3072842

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.4	5.8	108	117	80-120	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072843 3072844

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.4	5.3	108	105	80-120	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566277 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3072923 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	10/04/18 13:27	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	10/04/18 13:27	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	10/04/18 13:27	
Barium, Dissolved	ug/L	0.31J	10.0	0.18	10/04/18 13:27	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	10/04/18 13:27	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	10/04/18 13:27	
Calcium, Dissolved	ug/L	33.2J	500	13.9	10/04/18 13:27	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	10/04/18 13:27	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	10/04/18 13:27	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	10/04/18 13:27	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	10/04/18 13:27	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	10/04/18 13:27	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	10/04/18 13:27	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	10/04/18 13:27	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	10/04/18 13:27	
Potassium, Dissolved	ug/L	<310	2500	310	10/04/18 13:27	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	10/04/18 13:27	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	10/04/18 13:27	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	10/04/18 13:27	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	10/04/18 13:27	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	10/04/18 13:27	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	10/04/18 13:27	

LABORATORY CONTROL SAMPLE: 3072924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20400	102	80-120	
Antimony, Dissolved	ug/L	1000	948	95	80-120	
Arsenic, Dissolved	ug/L	1000	920	92	80-120	
Barium, Dissolved	ug/L	1000	964	96	80-120	
Beryllium, Dissolved	ug/L	1000	965	96	80-120	
Cadmium, Dissolved	ug/L	1000	960	96	80-120	
Calcium, Dissolved	ug/L	20000	18700	93	80-120	
Chromium, Dissolved	ug/L	1000	954	95	80-120	
Cobalt, Dissolved	ug/L	1000	953	95	80-120	
Copper, Dissolved	ug/L	1000	920	92	80-120	
Iron, Dissolved	ug/L	20000	19100	95	80-120	
Lead, Dissolved	ug/L	1000	957	96	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

LABORATORY CONTROL SAMPLE: 3072924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19400	97	80-120	
Manganese, Dissolved	ug/L	1000	961	96	80-120	
Nickel, Dissolved	ug/L	1000	945	95	80-120	
Potassium, Dissolved	ug/L	20000	19100	95	80-120	
Selenium, Dissolved	ug/L	1000	986	99	80-120	
Silver, Dissolved	ug/L	500	459	92	80-120	
Sodium, Dissolved	ug/L	20000	18800	94	80-120	
Thallium, Dissolved	ug/L	1000	947	95	80-120	
Vanadium, Dissolved	ug/L	1000	946	95	80-120	
Zinc, Dissolved	ug/L	1000	963	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072925 3072926

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	29.8J	20000	20000	19500	20300	97	101	75-125	4	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	985	976	98	98	75-125	1	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	885	920	88	92	75-125	4	20	
Barium, Dissolved	ug/L	79.7	1000	1000	983	1020	90	94	75-125	4	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	930	961	93	96	75-125	3	20	
Cadmium, Dissolved	ug/L	0.27J	1000	1000	919	951	92	95	75-125	3	20	
Calcium, Dissolved	ug/L	25300	20000	20000	42100	43300	84	90	75-125	3	20	
Chromium, Dissolved	ug/L	0.87J	1000	1000	909	943	91	94	75-125	4	20	
Cobalt, Dissolved	ug/L	0.57J	1000	1000	898	932	90	93	75-125	4	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	880	911	88	91	75-125	3	20	
Iron, Dissolved	ug/L	231	20000	20000	18400	19000	91	94	75-125	3	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	905	938	90	94	75-125	4	20	
Magnesium, Dissolved	ug/L	23100	20000	20000	40400	41500	86	92	75-125	3	20	
Manganese, Dissolved	ug/L	110	1000	1000	1030	1060	92	95	75-125	3	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	892	922	89	92	75-125	3	20	
Potassium, Dissolved	ug/L	4500	20000	20000	23400	24100	94	98	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	935	974	94	97	75-125	4	20	
Silver, Dissolved	ug/L	<0.38	500	500	459	476	92	95	75-125	4	20	
Sodium, Dissolved	ug/L	24800	20000	20000	41000	41700	81	84	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	896	929	90	93	75-125	4	20	
Vanadium, Dissolved	ug/L	0.45J	1000	1000	906	940	91	94	75-125	4	20	
Zinc, Dissolved	ug/L	2.6J	1000	1000	910	943	91	94	75-125	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072927 3072928

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<15.5	20000	20000	18600	19500	93	98	75-125	5	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	962	975	96	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072927 3072928

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	<3.8	1000	1000	851	893	85	89	75-125	5	20	
Barium, Dissolved	ug/L	53.8	1000	1000	929	967	88	91	75-125	4	20	
Beryllium, Dissolved	ug/L	0.19J	1000	1000	894	937	89	94	75-125	5	20	
Cadmium, Dissolved	ug/L	0.40J	1000	1000	879	924	88	92	75-125	5	20	
Calcium, Dissolved	ug/L	55600	20000	20000	70900	73100	76	87	75-125	3	20	
Chromium, Dissolved	ug/L	0.65J	1000	1000	870	915	87	91	75-125	5	20	
Cobalt, Dissolved	ug/L	0.70J	1000	1000	856	898	86	90	75-125	5	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	848	894	85	89	75-125	5	20	
Iron, Dissolved	ug/L	7.3J	20000	20000	17300	18200	87	91	75-125	5	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	863	904	86	90	75-125	5	20	
Magnesium, Dissolved	ug/L	16800	20000	20000	34300	35800	87	95	75-125	4	20	
Manganese, Dissolved	ug/L	0.52J	1000	1000	881	922	88	92	75-125	5	20	
Nickel, Dissolved	ug/L	2.5J	1000	1000	851	895	85	89	75-125	5	20	
Potassium, Dissolved	ug/L	1270J	20000	20000	19500	20400	91	96	75-125	4	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	897	943	89	94	75-125	5	20	
Silver, Dissolved	ug/L	<0.38	500	500	444	465	89	93	75-125	5	20	
Sodium, Dissolved	ug/L	16700	20000	20000	33300	35100	83	92	75-125	5	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	857	896	86	89	75-125	4	20	
Vanadium, Dissolved	ug/L	9.4J	1000	1000	876	919	87	91	75-125	5	20	
Zinc, Dissolved	ug/L	5.4J	1000	1000	871	909	87	90	75-125	4	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 568003 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449442001, 10449442003

METHOD BLANK: 3082465 Matrix: Water
Associated Lab Samples: 10449442001, 10449442003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/09/18 07:55	

LABORATORY CONTROL SAMPLE & LCSD: 3082466 3082467

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.0	39.2	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082468 3082469

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	251	40	40	294	304	107	131	80-120	3	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082470 3082471

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	208	40	40	251	246	108	94	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 568004 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449442002, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3082472 Matrix: Water
Associated Lab Samples: 10449442002, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/09/18 11:05	

LABORATORY CONTROL SAMPLE & LCSD: 3082473 3082474

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.3	39.8	98	99	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082475 3082476

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	215	40	40	249	249	83	85	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082477 3082478

Parameter	Units	10449442004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	177	40	40	222	215	112	96	80-120	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566833 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449442001

METHOD BLANK: 3075542 | Matrix: Water
Associated Lab Samples: 10449442001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/03/18 11:13	

LABORATORY CONTROL SAMPLE: 3075543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	968	97	80-120	

SAMPLE DUPLICATE: 3075544

Parameter	Units	10449169001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	623	660	6	5	D6

SAMPLE DUPLICATE: 3075545

Parameter	Units	10449442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	237	235	1	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566834 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3075546 Matrix: Water
Associated Lab Samples: 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/03/18 14:29	

LABORATORY CONTROL SAMPLE: 3075547

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	988	99	80-120	

SAMPLE DUPLICATE: 3075548

Parameter	Units	10449442002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	325	345	6	5	D6

SAMPLE DUPLICATE: 3075549

Parameter	Units	10449807003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	253	254	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 121949 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449442001, 10449442003, 10449442004, 10449442005

METHOD BLANK: 525780 Matrix: Water
Associated Lab Samples: 10449442001, 10449442003, 10449442004, 10449442005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 10:59	

LABORATORY CONTROL SAMPLE: 525781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 525790

Parameter	Units	10449444002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.0098J	4	75-125	M1

MATRIX SPIKE SAMPLE: 525792

Parameter	Units	10449442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.068	32	75-125	M1

SAMPLE DUPLICATE: 525789

Parameter	Units	10449444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 525791

Parameter	Units	10449442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 121973
Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449442002, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 525900 Matrix: Water
Associated Lab Samples: 10449442002, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 12:31	

LABORATORY CONTROL SAMPLE: 525901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.21	104	90-110	

MATRIX SPIKE SAMPLE: 525903

Parameter	Units	10449442002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.073	36	75-125	M1

SAMPLE DUPLICATE: 525902

Parameter	Units	10449442002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 566009 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3071263 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	09/28/18 18:21	
Nitrate as N	mg/L	<0.015	0.10	0.015	09/28/18 18:21	
Sulfate	mg/L	<0.19	1.2	0.19	09/28/18 18:21	

LABORATORY CONTROL SAMPLE: 3071264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.92	92	90-110	
Sulfate	mg/L	12.5	12.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071265 3071266

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.9	12.5	12.5	17.1	17.2	90	90	90-110	0	20	
Nitrate as N	mg/L	5.6	1	1	5.7	5.7	8	10	90-110	0	20	M1
Sulfate	mg/L	18.3	12.5	12.5	28.8	28.7	84	83	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071267 3071268

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.5	12.5	12.5	15.9	15.9	91	91	90-110	0	20	
Nitrate as N	mg/L	1.9	1	1	2.6	2.6	68	68	90-110	0	20	M1
Sulfate	mg/L	7.2	12.5	12.5	19.2	19.1	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071921 3071922

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.1	12.5	12.5	14.7	14.7	93	93	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.92	0.91	92	91	90-110	0	20	
Sulfate	mg/L	10.3	12.5	12.5	21.9	21.8	92	92	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 567175 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449442001, 10449442003, 10449442004, 10449442005, 10449442006

METHOD BLANK: 3077500 Matrix: Water
Associated Lab Samples: 10449442001, 10449442003, 10449442004, 10449442005, 10449442006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	10/04/18 12:07	

LABORATORY CONTROL SAMPLE: 3077501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.97	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077502 3077503

Parameter	Units	10449193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<17.7 ug/L	1	1	1.0	1.0	104	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077504 3077505

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.018	1	1	1.0	1.0	101	102	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 567424 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449442002, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3079205 Matrix: Water
Associated Lab Samples: 10449442002, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	10/05/18 10:42	FS

LABORATORY CONTROL SAMPLE: 3079206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079207 3079208

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.4	5	5	10.8	10.2	108	95	90-110	6	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079209 3079210

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.8	1	1	2.9	2.9	105	103	90-110	1	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 568045 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 3082624 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007, 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	30.8J	50.0	17.0	10/09/18 17:43	

LABORATORY CONTROL SAMPLE: 3082625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082626 3082627

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	248	267	98	106	90-110	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082628 3082629

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	33.1J	250	250	248	272	86	95	90-110	9	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 153375 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007

METHOD BLANK: 606749 Matrix: Water
Associated Lab Samples: 10449442001, 10449442002, 10449442003, 10449442004, 10449442005, 10449442006, 10449442007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.25J	1.0	0.20	10/02/18 12:45	

LABORATORY CONTROL SAMPLE: 606750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606751 606752

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.8	25	25	25.9	25.8	97	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606753 606754

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.2	25	25	26.0	25.9	99	99	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

QC Batch: 153378 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449442008, 10449442009, 10449442010, 10449442011

METHOD BLANK: 606762 Matrix: Water
Associated Lab Samples: 10449442008, 10449442009, 10449442010, 10449442011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.21J	1.0	0.20	10/02/18 00:54	

LABORATORY CONTROL SAMPLE: 606763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606764 606765

Parameter	Units	10449213001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	<0.20	25	25	25.7	25.6	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606766 606767

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.2	25	25	26.7	25.8	102	98	80-120	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H1	Analysis conducted outside the recognized method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449442001	**MW21D-GW-092618**	RSK 175	566104		
10449442002	**MW16D-GW-092618**	RSK 175	566104		
10449442003	**MW18D-GW-092618**	RSK 175	566104		
10449442004	**MW15D-GW-092618**	RSK 175	566104		
10449442005	**MW4D-GW-092618**	RSK 175	566104		
10449442006	**MW17D-GW-092618**	RSK 175	566104		
10449442007	**MW19D-GW-092618**	RSK 175	566104		
10449442008	**MW5D-GW-092618**	RSK 175	566104		
10449442009	**MW20D-GW-092618**	RSK 175	566104		
10449442010	**FD3-092618**	RSK 175	566104		
10449442011	**MW14D-GW-092618**	RSK 175	566104		
10449442001	**MW21D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442002	**MW16D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442003	**MW18D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442004	**MW15D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442005	**MW4D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442006	**MW17D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442007	**MW19D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442008	**MW5D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442009	**MW20D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442010	**FD3-092618**	EPA 3010	566277	EPA 6010D	566822
10449442011	**MW14D-GW-092618**	EPA 3010	566277	EPA 6010D	566822
10449442001	**MW21D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442002	**MW16D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442003	**MW18D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442004	**MW15D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442005	**MW4D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442006	**MW17D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442007	**MW19D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442008	**MW5D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442009	**MW20D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442010	**FD3-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442011	**MW14D-GW-092618**	EPA 7470A	566256	EPA 7470A	566917
10449442001	**MW21D-GW-092618**	SM 2320B	568003		
10449442002	**MW16D-GW-092618**	SM 2320B	568004		
10449442003	**MW18D-GW-092618**	SM 2320B	568003		
10449442004	**MW15D-GW-092618**	SM 2320B	568004		
10449442005	**MW4D-GW-092618**	SM 2320B	568004		
10449442006	**MW17D-GW-092618**	SM 2320B	568004		
10449442007	**MW19D-GW-092618**	SM 2320B	568004		
10449442008	**MW5D-GW-092618**	SM 2320B	568004		
10449442009	**MW20D-GW-092618**	SM 2320B	568004		
10449442010	**FD3-092618**	SM 2320B	568004		
10449442011	**MW14D-GW-092618**	SM 2320B	568004		
10449442001	**MW21D-GW-092618**	SM 2540C	566833		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449442002	**MW16D-GW-092618**	SM 2540C	566834		
10449442003	**MW18D-GW-092618**	SM 2540C	566834		
10449442004	**MW15D-GW-092618**	SM 2540C	566834		
10449442005	**MW4D-GW-092618**	SM 2540C	566834		
10449442006	**MW17D-GW-092618**	SM 2540C	566834		
10449442007	**MW19D-GW-092618**	SM 2540C	566834		
10449442008	**MW5D-GW-092618**	SM 2540C	566834		
10449442009	**MW20D-GW-092618**	SM 2540C	566834		
10449442010	**FD3-092618**	SM 2540C	566834		
10449442011	**MW14D-GW-092618**	SM 2540C	566834		
10449442001	**MW21D-GW-092618**	SM 4500-S-2 D	121949		
10449442002	**MW16D-GW-092618**	SM 4500-S-2 D	121973		
10449442003	**MW18D-GW-092618**	SM 4500-S-2 D	121949		
10449442004	**MW15D-GW-092618**	SM 4500-S-2 D	121949		
10449442005	**MW4D-GW-092618**	SM 4500-S-2 D	121949		
10449442006	**MW17D-GW-092618**	SM 4500-S-2 D	121973		
10449442007	**MW19D-GW-092618**	SM 4500-S-2 D	121973		
10449442008	**MW5D-GW-092618**	SM 4500-S-2 D	121973		
10449442009	**MW20D-GW-092618**	SM 4500-S-2 D	121973		
10449442010	**FD3-092618**	SM 4500-S-2 D	121973		
10449442011	**MW14D-GW-092618**	SM 4500-S-2 D	121973		
10449442001	**MW21D-GW-092618**	EPA 300.0	566009		
10449442002	**MW16D-GW-092618**	EPA 300.0	566009		
10449442003	**MW18D-GW-092618**	EPA 300.0	566009		
10449442004	**MW15D-GW-092618**	EPA 300.0	566009		
10449442005	**MW4D-GW-092618**	EPA 300.0	566009		
10449442006	**MW17D-GW-092618**	EPA 300.0	566009		
10449442007	**MW19D-GW-092618**	EPA 300.0	566009		
10449442008	**MW5D-GW-092618**	EPA 300.0	566009		
10449442009	**MW20D-GW-092618**	EPA 300.0	566009		
10449442010	**FD3-092618**	EPA 300.0	566009		
10449442011	**MW14D-GW-092618**	EPA 300.0	566009		
10449442001	**MW21D-GW-092618**	EPA 353.2	567175		
10449442002	**MW16D-GW-092618**	EPA 353.2	567424		
10449442003	**MW18D-GW-092618**	EPA 353.2	567175		
10449442004	**MW15D-GW-092618**	EPA 353.2	567175		
10449442005	**MW4D-GW-092618**	EPA 353.2	567175		
10449442006	**MW17D-GW-092618**	EPA 353.2	567175		
10449442007	**MW19D-GW-092618**	EPA 353.2	567424		
10449442008	**MW5D-GW-092618**	EPA 353.2	567424		
10449442009	**MW20D-GW-092618**	EPA 353.2	567424		
10449442010	**FD3-092618**	EPA 353.2	567424		
10449442011	**MW14D-GW-092618**	EPA 353.2	567424		
10449442001	**MW21D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

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Pace Project No.: 10449442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449442002	**MW16D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442003	**MW18D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442004	**MW15D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442005	**MW4D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442006	**MW17D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442007	**MW19D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442008	**MW5D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442009	**MW20D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442010	**FD3-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442011	**MW14D-GW-092618**	EPA 410.4	568045	EPA 410.4	568193
10449442001	**MW21D-GW-092618**	SM 5310C	153375		
10449442002	**MW16D-GW-092618**	SM 5310C	153375		
10449442003	**MW18D-GW-092618**	SM 5310C	153375		
10449442004	**MW15D-GW-092618**	SM 5310C	153375		
10449442005	**MW4D-GW-092618**	SM 5310C	153375		
10449442006	**MW17D-GW-092618**	SM 5310C	153375		
10449442007	**MW19D-GW-092618**	SM 5310C	153375		
10449442008	**MW5D-GW-092618**	SM 5310C	153378		
10449442009	**MW20D-GW-092618**	SM 5310C	153378		
10449442010	**FD3-092618**	SM 5310C	153378		
10449442011	**MW14D-GW-092618**	SM 5310C	153378		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b[e completed accurately]

WO#: 10449442

10449442

Section A — Required Client Information:

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:
Phone: Fax:
Requested Due Date: *10 Day Standard*

Section B — Required Project Information:

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Lindsey Baumann
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #: PEDD# 1497
Project Name: Freeman WA-Grain Handling Facility
Project #: 1497

Section C — Invoice Information:

Attention: Anne Walsh
Company: UPRR
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: *36447 / 4*

State / Location: WA / Freeman

Matrix codes: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MW21D-GW-092618	WT	G	9/26	900	–	–	–	26	X	X	X		X				X	X	X	X	X	X	X	X	X	X	001
2	MW16D-GW-092618	↓	↓	↓	1015	–	–	–	27	X	X	X		X				X	X	X	X	X	X	X	X	X	X	002
3	MW18D-GW-092618				1100	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		003
4	MW15D-GW-092618				1200	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		004
5	MW4D-GW-092618				1245	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		005
6	MW17D-GW-092618				1415	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		006
7	MW19D-GW-092618				1500	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		007
8	MW5D-GW-092618				1545	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		008
9	MW20D-GW-092618				1645	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		009
10	FD3-092618	↓	↓	↓	1800	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		010
11	MW14D-GW-092618	WT	G	9/26	1745	–	–	–	9	X	X	X		X				X	X	X	X	X	X	X	X	X		011
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/27/18	1500	[signature] Pace	9/28/18	1000	5.8 2.7 0.8 3.2	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza
SIGNATURE of SAMPLER: [signature]
DATE Signed: 9/26/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M HILL - UPRR

Project #:

WO# : 10449442
PM: JMG Due Date: 10/05/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4748/4770/4760/4759

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 5.6, 2.5, 0.6, 3.0 **Cooler Temp Corrected (°C):** 5.8, 2.7, 0.8, 3.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** EJT 9/28/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12. CONTAINERS FOR SAMPLE "MWSD-GW-092018" DON'T HAVE MATCHING IDS, BUT DATE + TIME ARE CORRECT - SEE EXCEPTIONS
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO₃ ☒ H₂SO₄ ☒ NaOH + ZN. ACETATE; Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-11: 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS; Per method, VOA pH is checked after analysis	☒ Yes	☐ No	~~☒ N/A~~ EJT 9/28/18	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA cert not required for RSK or Sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1230	Temp: 5.6, 2.5, 0.6, 3.0	Corrected Temp: 5.8, 2.7, 0.8, 3.2
Time: 1250	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 09/27/18

Note: Whenever there is a discrepancy affecting North Carolina compli of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: KV

SCUR Exceptions:

Workorder #:

Issue	Sample ID	Container Type/#
CONTAINERS LABELED W/ SEPERATE ID FROM THOSE IN THE SAME BAG FOR SAMPLE. LABELED W/ CORRECT DATE + TIME AS OTHER CONTAINERS FOR THAT SAMPLE.	MW5D-GW-092618 (LABELED AS MW26D-GW-092618)	DG9S 2/2, VSG 3/3
		"
	"	"

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH Upon Receipt	Date Preservation Adjusted	Time Preservation Adjusted	Amount of Additional Preservative Added	Lot # of Preservative Added	pH After Adjustment	Initials

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: ☒ Yes ☐

Workorder: 10449442 Workorder Name: 1497 Freeman WA-Grain Handling

Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4 DG9S	5632354 / 5310 TOC	5632354 / 5310 TOC	LAB USE ONLY
1	MW21D-GW-092618	RQS	9/26/2018 09:00	10449442001	Water	~~6~~ 5 9/28/18	X	X	MS/MSD
2	MW16D-GW-092618	RQS	9/26/2018 10:15	10449442002	Water	6	X	X	MS/MSD
3	MW18D-GW-092618	PS	9/26/2018 11:00	10449442003	Water	2		X	
4	MW15D-GW-092618	PS	9/26/2018 12:00	10449442004	Water	2		X	
5	MW4D-GW-092618	PS	9/26/2018 12:45	10449442005	Water	2		X	
6	MW17D-GW-092618	PS	9/26/2018 14:15	10449442006	Water	2		X	
7	MW19D-GW-092618	PS	9/26/2018 15:00	10449442007	Water	2		X	
8	MW5D-GW-092618	PS	9/26/2018 15:45	10449442008	Water	2		X	
9	MW20D-GW-092618	PS	9/26/2018 16:45	10449442009	Water	2		X	
10	FD3-092618	PS	9/26/2018 18:00	10449442010	Water	2		X	
11	MW14D-GW-092618	PS	9/26/2018 17:45	10449442011	Water	2		X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle / Pace	9/28/18 1550	DJ CL 9.28.18	1950
2	DJ CL 9.28.18	2330	B Mathews	10/1/18 0900
3				

Comments

Cooler Temperature on Receipt 0.7 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO# : 12116542

PM: CLJ Due Date: 10/12/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other: ______

Tracking Number: ______

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: ______

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun Temp Blank? ☒ Yes ☐ No

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7
Temp should be above freezing to 6°C Correction Factor: 0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Date and Initials of Person Examining Contents: 9-28-18 PL
Comments: BM 10/1/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ______ Date/Time: ______

Comments/Resolution: ______

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] Date: 10/1/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2084996

2084996

Chain of Custody

Samples were sent directly to t[l]

tate Of Origin: WA

Cert. Needed: [ ] Yes [X] No

Workorder: 10449442 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To

Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To

Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	5636267 / 4500 Sulfide	5636267 / 4500 Sulfide	LAB USE ONLY
1	MW21D-GW-092618	RQS	9/26/2018 09:00	10449442001	Water	3	X	X	MS/MSD
2	MW16D-GW-092618	RQS	9/26/2018 10:15	10449442002	Water	3	X	X	MS/MSD
3	MW18D-GW-092618	PS	9/26/2018 11:00	10449442003	Water	1		X	
4	MW15D-GW-092618	PS	9/26/2018 12:00	10449442004	Water	1		X	
5	MW4D-GW-092618	PS	9/26/2018 12:45	10449442005	Water	1		X	
6	MW17D-GW-092618	PS	9/26/2018 14:15	10449442006	Water	1		X	
7	MW19D-GW-092618	PS	9/26/2018 15:00	10449442007	Water	1		X	
8	MW5D-GW-092618	PS	9/26/2018 15:45	10449442008	Water	1		X	
9	MW20D-GW-092618	PS	9/26/2018 16:45	10449442009	Water	1		X	
10	FD3-092618	PS	9/26/2018 18:00	10449442010	Water	1		X	
11	MW14D-GW-092618	PS	9/26/2018 17:45	10449442011	Water	1		X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle / Pace	9/28/18 1610		
2	FedEx	9/29/18 0845	[illegible]	9/29/18 0845
3				

Comments

Cooler Temperature on Receipt 2.1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 2084996

PM: CMM Due Date: 10/12/18

CLIENT: PASI-MINN

Pace Analytical

Sample Condition Upo

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

P.

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10-1-18

Temp must be measured from Temperature blank when present

	Yes	No	N/A	Comments:
Temperature Blank Present"?	☑Yes	☐No	☐N/A	1
Chain of Custody Present:	☑Yes	☐No	☐N/A	2
Chain of Custody Complete:	☑Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	5
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	6
Sufficient Volume:	☑Yes	☐No	☐N/A	7
Correct Containers Used:	☑Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☑No	☐N/A	9
Sample Labels match COC:	☑Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	14
Trip Blank Present:	☐Yes	☑No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ____________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 11, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, Jacobs
Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449444

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Montana Certificate #CERT0103
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449444001	**MW6D-GW-092518**	Water	09/25/18 14:45	09/28/18 10:00
10449444002	**MW6U-GW-092518**	Water	09/25/18 15:45	09/28/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449444001	**MW6D-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449444002	**MW6U-GW-092518**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449444001	**MW6D-GW-092518**					
EPA 6010D	Aluminum, Dissolved	26.2J	ug/L	200	10/04/18 14:22	B
EPA 6010D	Barium, Dissolved	6.8J	ug/L	10.0	10/04/18 14:22	
EPA 6010D	Cadmium, Dissolved	0.28J	ug/L	3.0	10/04/18 14:22	
EPA 6010D	Calcium, Dissolved	29100	ug/L	500	10/04/18 14:22	
EPA 6010D	Cobalt, Dissolved	0.55J	ug/L	10.0	10/04/18 14:22	
EPA 6010D	Iron, Dissolved	37.4J	ug/L	50.0	10/04/18 14:22	B
EPA 6010D	Magnesium, Dissolved	12900	ug/L	500	10/04/18 14:22	
EPA 6010D	Manganese, Dissolved	17.6	ug/L	5.0	10/04/18 14:22	
EPA 6010D	Potassium, Dissolved	8370	ug/L	2500	10/04/18 14:22	
EPA 6010D	Sodium, Dissolved	17700	ug/L	1000	10/04/18 14:22	
EPA 6010D	Vanadium, Dissolved	5.6J	ug/L	15.0	10/04/18 14:22	
EPA 6010D	Zinc, Dissolved	4.4J	ug/L	20.0	10/04/18 14:22	
SM 2320B	Alkalinity, Total as CaCO3	181	mg/L	5.0	10/09/18 09:00	
SM 2540C	Total Dissolved Solids	222	mg/L	10.0	10/02/18 14:49	
EPA 300.0	Chloride	2.3	mg/L	1.2	09/28/18 15:46	
EPA 300.0	Nitrate as N	0.15	mg/L	0.10	09/28/18 15:46	H3
EPA 300.0	Sulfate	5.5	mg/L	1.2	09/28/18 15:46	
EPA 353.2	Nitrogen, NO2 plus NO3	0.16	mg/L	0.10	10/05/18 10:28	
EPA 410.4	Chemical Oxygen Demand	32.6J	mg/L	50.0	10/09/18 17:47	B
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	10/02/18 05:06	B
10449444002	**MW6U-GW-092518**					
EPA 6010D	Aluminum, Dissolved	62.4J	ug/L	200	10/04/18 14:24	B
EPA 6010D	Barium, Dissolved	43.2	ug/L	10.0	10/04/18 14:24	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	10/04/18 14:24	
EPA 6010D	Calcium, Dissolved	61000	ug/L	500	10/04/18 14:24	
EPA 6010D	Chromium, Dissolved	0.53J	ug/L	10.0	10/04/18 14:24	
EPA 6010D	Cobalt, Dissolved	0.53J	ug/L	10.0	10/04/18 14:24	
EPA 6010D	Copper, Dissolved	1.5J	ug/L	10.0	10/04/18 14:24	
EPA 6010D	Iron, Dissolved	62.4	ug/L	50.0	10/04/18 14:24	B
EPA 6010D	Magnesium, Dissolved	19300	ug/L	500	10/04/18 14:24	
EPA 6010D	Manganese, Dissolved	3.7J	ug/L	5.0	10/04/18 14:24	
EPA 6010D	Potassium, Dissolved	1680J	ug/L	2500	10/04/18 14:24	
EPA 6010D	Sodium, Dissolved	15100	ug/L	1000	10/04/18 14:24	
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	10/04/18 14:24	
EPA 6010D	Zinc, Dissolved	4.6J	ug/L	20.0	10/04/18 14:24	
EPA 7470A	Mercury, Dissolved	0.29	ug/L	0.20	10/08/18 15:58	
SM 2320B	Alkalinity, Total as CaCO3	251	mg/L	5.0	10/09/18 09:05	M1
SM 2540C	Total Dissolved Solids	321	mg/L	10.0	10/02/18 14:49	
EPA 300.0	Chloride	4.5	mg/L	1.2	09/28/18 17:36	
EPA 300.0	Nitrate as N	1.9	mg/L	0.10	09/28/18 17:36	H3,M1
EPA 300.0	Sulfate	7.2	mg/L	1.2	09/28/18 17:36	
EPA 353.2	Nitrogen, NO2 plus NO3	1.8	mg/L	0.10	10/05/18 10:29	
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	10/02/18 05:21	B

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Additional Comments:

Pace Analytical
www.pacelabs.com

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 566278

B: Analyte was detected in the associated method blank.
- BLANK for HBN 566278 [MPRP/867 (Lab ID: 3072929)
  - Aluminum, Dissolved
  - Iron, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568003

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3082469)
  - Alkalinity, Total as CaCO3

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 121949

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 525790)
  - Sulfide, Total
- MS (Lab ID: 525792)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- MW6D-GW-092518 (Lab ID: 10449444001)
- MW6U-GW-092518 (Lab ID: 10449444002)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 566009

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449442002,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3071265)
  - Nitrate as N
  - Sulfate
- MS (Lab ID: 3071267)
  - Nitrate as N
- MSD (Lab ID: 3071266)
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 3071268)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567424

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3079207)
  - Nitrogen, NO2 plus NO3
- MS (Lab ID: 3079209)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079208)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079210)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 568045

B: Analyte was detected in the associated method blank.
- BLANK for HBN 568045 [WETA/370 (Lab ID: 3082624)
  - Chemical Oxygen Demand

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568045

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449442002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3082628)
  - Chemical Oxygen Demand

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 153378

B: Analyte was detected in the associated method blank.
- BLANK for HBN 153378 [WETA/251 (Lab ID: 606762)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Sample: MW6D-GW-092518 **Lab ID: 10449444001** Collected: 09/25/18 14:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 09:06	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 09:06	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 09:06	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**26.2J**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:22	7429-90-5	B
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:22	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:22	7440-38-2	
Barium, Dissolved	**6.8J**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:22	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:22	7440-41-7	
Cadmium, Dissolved	**0.28J**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:22	7440-43-9	
Calcium, Dissolved	**29100**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:22	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:22	7440-47-3	
Cobalt, Dissolved	**0.55J**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:22	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:22	7440-50-8	
Iron, Dissolved	**37.4J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:22	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:22	7439-92-1	
Magnesium, Dissolved	**12900**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:22	7439-95-4	
Manganese, Dissolved	**17.6**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:22	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:22	7440-02-0	
Potassium, Dissolved	**8370**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:22	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:22	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:22	7440-22-4	
Sodium, Dissolved	**17700**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:22	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:22	7440-28-0	
Vanadium, Dissolved	**5.6J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:22	7440-62-2	
Zinc, Dissolved	**4.4J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:22	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 15:56	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**181**	mg/L	5.0	1.0	1		10/09/18 09:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**222**	mg/L	10.0	5.0	1		10/02/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:38	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.2	0.28	1		09/28/18 15:46	16887-00-6	
Nitrate as N	**0.15**	mg/L	0.10	0.015	1		09/28/18 15:46	14797-55-8	H3
Sulfate	**5.5**	mg/L	1.2	0.19	1		09/28/18 15:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Sample: MW6D-GW-092518 **Lab ID: 10449444001** Collected: 09/25/18 14:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.16**	mg/L	0.10	0.018	1		10/05/18 10:28		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**32.6J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:47		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.4**	mg/L	1.0	0.20	1		10/02/18 05:06	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449444

Sample: MW6U-GW-092518 **Lab ID: 10449444002** Collected: 09/25/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/01/18 09:13	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/01/18 09:13	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/01/18 09:13	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**62.4J**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:24	7429-90-5	B
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:24	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:24	7440-38-2	
Barium, Dissolved	**43.2**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:24	7440-39-3	
Beryllium, Dissolved	**0.13J**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:24	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:24	7440-43-9	
Calcium, Dissolved	**61000**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:24	7440-70-2	
Chromium, Dissolved	**0.53J**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:24	7440-47-3	
Cobalt, Dissolved	**0.53J**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:24	7440-48-4	
Copper, Dissolved	**1.5J**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:24	7440-50-8	
Iron, Dissolved	**62.4**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:24	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:24	7439-92-1	
Magnesium, Dissolved	**19300**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:24	7439-95-4	
Manganese, Dissolved	**3.7J**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:24	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:24	7440-02-0	
Potassium, Dissolved	**1680J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:24	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:24	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:24	7440-22-4	
Sodium, Dissolved	**15100**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:24	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:24	7440-28-0	
Vanadium, Dissolved	**5.8J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:24	7440-62-2	
Zinc, Dissolved	**4.6J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:24	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**0.29**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 15:58	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**251**	mg/L	5.0	1.0	1		10/09/18 09:05		M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**321**	mg/L	10.0	5.0	1		10/02/18 14:49		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 11:40	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**4.5**	mg/L	1.2	0.28	1		09/28/18 17:36	16887-00-6	
Nitrate as N	**1.9**	mg/L	0.10	0.015	1		09/28/18 17:36	14797-55-8	H3,M1
Sulfate	**7.2**	mg/L	1.2	0.19	1		09/28/18 17:36	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Sample: MW6U-GW-092518 **Lab ID: 10449444002** Collected: 09/25/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.8**	mg/L	0.10	0.018	1		10/05/18 10:29		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:54		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.2**	mg/L	1.0	0.20	1		10/02/18 05:21	7440-44-0	B

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 566103 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3071904 Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	10/01/18 08:26	
Ethene	ug/L	<2.9	10.0	2.9	10/01/18 08:26	
Methane	ug/L	<4.9	10.0	4.9	10/01/18 08:26	

LABORATORY CONTROL SAMPLE & LCSD: 3071905 3071906

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	118	110	103	97	85-115	6	20	
Ethene	ug/L	106	112	104	105	98	85-115	7	20	
Methane	ug/L	60.7	63.4	60.2	105	99	85-115	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071907 3071908

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	116	123	102	108	30-150	6	20	
Ethene	ug/L	<2.9	106	106	110	116	103	109	30-150	6	20	
Methane	ug/L	<4.9	60.7	60.7	63.8	66.3	103	107	30-150	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3073047 3073048

Parameter	Units	60281977009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	ND	114	114	104	110	92	97	30-150	5	20	
Ethene	ug/L	ND	106	106	98.5	104	93	98	30-150	5	20	
Methane	ug/L	10.6	60.7	60.7	65.0	67.2	90	93	30-150	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 566259 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3072849 | Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	10/08/18 15:52	

LABORATORY CONTROL SAMPLE: 3072850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072851 3072852

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	0.29	5	5	5.0	5.0	95	93	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 566278 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3072929 Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	31.2J	200	15.5	10/04/18 14:19	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	10/04/18 14:19	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	10/04/18 14:19	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	10/04/18 14:19	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	10/04/18 14:19	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	10/04/18 14:19	
Calcium, Dissolved	ug/L	<13.9	500	13.9	10/04/18 14:19	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	10/04/18 14:19	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	10/04/18 14:19	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	10/04/18 14:19	
Iron, Dissolved	ug/L	10.6J	50.0	4.3	10/04/18 14:19	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	10/04/18 14:19	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	10/04/18 14:19	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	10/04/18 14:19	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	10/04/18 14:19	
Potassium, Dissolved	ug/L	<310	2500	310	10/04/18 14:19	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	10/04/18 14:19	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	10/04/18 14:19	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	10/04/18 14:19	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	10/04/18 14:19	
Vanadium, Dissolved	ug/L	0.46J	15.0	0.29	10/04/18 14:19	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	10/04/18 14:19	

LABORATORY CONTROL SAMPLE: 3072930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20300	101	80-120	
Antimony, Dissolved	ug/L	1000	941	94	80-120	
Arsenic, Dissolved	ug/L	1000	906	91	80-120	
Barium, Dissolved	ug/L	1000	952	95	80-120	
Beryllium, Dissolved	ug/L	1000	955	95	80-120	
Cadmium, Dissolved	ug/L	1000	948	95	80-120	
Calcium, Dissolved	ug/L	20000	18400	92	80-120	
Chromium, Dissolved	ug/L	1000	940	94	80-120	
Cobalt, Dissolved	ug/L	1000	943	94	80-120	
Copper, Dissolved	ug/L	1000	902	90	80-120	
Iron, Dissolved	ug/L	20000	18800	94	80-120	
Lead, Dissolved	ug/L	1000	942	94	80-120	
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	954	95	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

LABORATORY CONTROL SAMPLE: 3072930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	936	94	80-120	
Potassium, Dissolved	ug/L	20000	18800	94	80-120	
Selenium, Dissolved	ug/L	1000	975	97	80-120	
Silver, Dissolved	ug/L	500	471	94	80-120	
Sodium, Dissolved	ug/L	20000	18200	91	80-120	
Thallium, Dissolved	ug/L	1000	936	94	80-120	
Vanadium, Dissolved	ug/L	1000	935	93	80-120	
Zinc, Dissolved	ug/L	1000	952	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072931 3072932

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	62.4J	20000	20000	19700	18900	98	94	75-125	4	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	978	979	98	98	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	890	853	89	85	75-125	4	20	
Barium, Dissolved	ug/L	43.2	1000	1000	954	915	91	87	75-125	4	20	
Beryllium, Dissolved	ug/L	0.13J	1000	1000	940	900	94	90	75-125	4	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	919	881	92	88	75-125	4	20	
Calcium, Dissolved	ug/L	61000	20000	20000	79000	77000	90	80	75-125	3	20	
Chromium, Dissolved	ug/L	0.53J	1000	1000	913	876	91	88	75-125	4	20	
Cobalt, Dissolved	ug/L	0.53J	1000	1000	894	861	89	86	75-125	4	20	
Copper, Dissolved	ug/L	1.5J	1000	1000	889	850	89	85	75-125	5	20	
Iron, Dissolved	ug/L	62.4	20000	20000	18400	17700	92	88	75-125	4	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	901	866	90	87	75-125	4	20	
Magnesium, Dissolved	ug/L	19300	20000	20000	38200	37100	94	89	75-125	3	20	
Manganese, Dissolved	ug/L	3.7J	1000	1000	928	879	92	88	75-125	5	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	889	852	89	85	75-125	4	20	
Potassium, Dissolved	ug/L	1680J	20000	20000	20800	19900	96	91	75-125	4	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	935	900	93	90	75-125	4	20	
Silver, Dissolved	ug/L	<0.38	500	500	463	445	93	89	75-125	4	20	
Sodium, Dissolved	ug/L	15100	20000	20000	32900	31700	89	83	75-125	4	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	900	860	90	86	75-125	4	20	
Vanadium, Dissolved	ug/L	5.8J	1000	1000	913	876	91	87	75-125	4	20	
Zinc, Dissolved	ug/L	4.6J	1000	1000	910	869	91	86	75-125	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 568003 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3082465 | Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/09/18 07:55	

LABORATORY CONTROL SAMPLE & LCSD: 3082466 | 3082467

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	39.0	39.2	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082468 | 3082469

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	251	40	40	294	304	107	131	80-120	3	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082470 | 3082471

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	208	40	40	251	246	108	94	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 566544 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3073926 | Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/02/18 14:49	

LABORATORY CONTROL SAMPLE: 3073927

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	952	95	80-120	

SAMPLE DUPLICATE: 3073928

Parameter	Units	10449396002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	195	195	0	5	

SAMPLE DUPLICATE: 3073929

Parameter	Units	10449444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	321	318	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 121949
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 525780 Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 10:59	

LABORATORY CONTROL SAMPLE: 525781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 525790

Parameter	Units	10449444002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.0098J	4	75-125	M1

MATRIX SPIKE SAMPLE: 525792

Parameter	Units	10449442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.068	32	75-125	M1

SAMPLE DUPLICATE: 525789

Parameter	Units	10449444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

SAMPLE DUPLICATE: 525791

Parameter	Units	10449442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 566009 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3071263 | Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	09/28/18 18:21	
Nitrate as N	mg/L	<0.015	0.10	0.015	09/28/18 18:21	
Sulfate	mg/L	<0.19	1.2	0.19	09/28/18 18:21	

LABORATORY CONTROL SAMPLE: 3071264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.92	92	90-110	
Sulfate	mg/L	12.5	12.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071265 3071266

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.9	12.5	12.5	17.1	17.2	90	90	90-110	0	20	
Nitrate as N	mg/L	5.6	1	1	5.7	5.7	8	10	90-110	0	20	M1
Sulfate	mg/L	18.3	12.5	12.5	28.8	28.7	84	83	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071267 3071268

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.5	12.5	12.5	15.9	15.9	91	91	90-110	0	20	
Nitrate as N	mg/L	1.9	1	1	2.6	2.6	68	68	90-110	0	20	M1
Sulfate	mg/L	7.2	12.5	12.5	19.2	19.1	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071921 3071922

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.1	12.5	12.5	14.7	14.7	93	93	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.92	0.91	92	91	90-110	0	20	
Sulfate	mg/L	10.3	12.5	12.5	21.9	21.8	92	92	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 567424 — Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 — Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 3079205 — Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	10/05/18 10:42	FS

LABORATORY CONTROL SAMPLE: 3079206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079207 3079208

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.4	5	5	10.8	10.2	108	95	90-110	6	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079209 3079210

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.8	1	1	2.9	2.9	105	103	90-110	1	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 568045 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10449444001

METHOD BLANK: 3082624 | Matrix: Water
Associated Lab Samples: 10449444001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	30.8J	50.0	17.0	10/09/18 17:43	

LABORATORY CONTROL SAMPLE: 3082625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082626 3082627

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	248	267	98	106	90-110	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082628 3082629

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	33.1J	250	250	248	272	86	95	90-110	9	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 568586 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Associated Lab Samples: 10449444002

METHOD BLANK: 3085389 | Matrix: Water
Associated Lab Samples: 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	10/11/18 15:54	

LABORATORY CONTROL SAMPLE: 3085390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085391 | 3085392

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	243	246	94	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085393 | 3085394

Parameter	Units	10449490003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	247	249	96	97	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

QC Batch: 153378 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449444001, 10449444002

METHOD BLANK: 606762 Matrix: Water
Associated Lab Samples: 10449444001, 10449444002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.21J	1.0	0.20	10/02/18 00:54	

LABORATORY CONTROL SAMPLE: 606763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606764 606765

Parameter	Units	10449213001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	<0.20	25	25	25.7	25.6	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606766 606767

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.2	25	25	26.7	25.8	102	98	80-120	3	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449444

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449444001	**MW6D-GW-092518**	RSK 175	566103		
10449444002	**MW6U-GW-092518**	RSK 175	566103		
10449444001	**MW6D-GW-092518**	EPA 3010	566278	EPA 6010D	566813
10449444002	**MW6U-GW-092518**	EPA 3010	566278	EPA 6010D	566813
10449444001	**MW6D-GW-092518**	EPA 7470A	566259	EPA 7470A	566911
10449444002	**MW6U-GW-092518**	EPA 7470A	566259	EPA 7470A	566911
10449444001	**MW6D-GW-092518**	SM 2320B	568003		
10449444002	**MW6U-GW-092518**	SM 2320B	568003		
10449444001	**MW6D-GW-092518**	SM 2540C	566544		
10449444002	**MW6U-GW-092518**	SM 2540C	566544		
10449444001	**MW6D-GW-092518**	SM 4500-S-2 D	121949		
10449444002	**MW6U-GW-092518**	SM 4500-S-2 D	121949		
10449444001	**MW6D-GW-092518**	EPA 300.0	566009		
10449444002	**MW6U-GW-092518**	EPA 300.0	566009		
10449444001	**MW6D-GW-092518**	EPA 353.2	567424		
10449444002	**MW6U-GW-092518**	EPA 353.2	567424		
10449444001	**MW6D-GW-092518**	EPA 410.4	568045	EPA 410.4	568193
10449444002	**MW6U-GW-092518**	EPA 410.4	568586	EPA 410.4	568740
10449444001	**MW6D-GW-092518**	SM 5310C	153378		
10449444002	**MW6U-GW-092518**	SM 5310C	153378		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

WO# : 10449444

10449444

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MWGD-GW-092518	WT	G	9/25	1445	—	—	—	9	X	X	X		X			X	X	X	X	X	X	X	X	X	X		C01
2	MWGU-GW-092518	↓	↓	↓	1545	—	—	—	27	X	X	X		X			X	X	X	X	X	X	X	X	X	X	X	[redacted] C02
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	9/26/18	1600	[signature] PACE	9/26/18	1000	5.8 2.2 0.8 3.2	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/25/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M HILL - UPRR

Project #:

WO#: 10449444

PM: JMG Due Date: 10/05/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4748/4770/4760/4759

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 5.6, 2.5, 0.6, 3.0 **Cooler Temp Corrected (°C):** 5.8, 2.7, 0.8, 3.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** EPV 9/28/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12. ~~CONTAINER LABELS DO NOT MATCH COC PER SAMPLE~~ EPV 9/28/18
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☒ NaOH +ZN Positive for Res. Chlorine? Y / N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1-2: ✓ ✓ ✓
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	~~☒ N/A~~ EPV 9/28/18	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs are not required for RSK or sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1230	Temp: 5.6, 2.5, 0.6, 3.0	Corrected Temp: 5.8, 2.7, 0.8, 3.2
Time: 1250	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 09/28/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: RV

WO#: 12116544

12116544

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: ☒ Yes ☐ No

Workorder: 10449444 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	DG9S H2SO4				5632354 / 5310 TOC	LAB USE ONLY
1	MW6D-GW-092518	PS	9/25/2018 14:45	10449444001	Water		2				X	
2	MW6U-GW-092518	RQS	9/25/2018 15:45	10449444002	Water		6				X	MS/MSD
3												
4												
5												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle [illegible]	9/28/18 1530	[illegible] 9-28-18	1950
2	[illegible] 9-28-18	2330	R. Mathews	10/1/18 0900
3				

Comments

Cooler Temperature on Receipt 0.7 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO#: 12116544
PM: CLJ
Due Date: 10/12/18
CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 9-28-18 PL

Comments: BM 10/1/18

	Yes	No	N/A	Comments
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] **Date:** 10/1/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 2084995

Chain of Custody

☐ Samples were sent directly to 2084995

State Of Origin: WA

Cert. Needed: ☐ Yes ☒ No

Workorder: 10449444 Workorder Name: 1497 Freeman WA-Grain Handling

Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	BP2Z	NaOH+Zinc Acetate				Requested Analysis: 5636267 / 4500 Sulfide	LAB USE ONLY
1	MW6D-GW-092518	PS	9/25/2018 14:45	10449444001	Water		1					X	
2	MW6U-GW-092518	RQS	9/25/2018 15:45	10449444002	Water		3					X	MS/MSD
3													
4													
5													

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kyle [illegible]	9/28/18 1610		
2	FedEx	9/29/18 0845	[illegible]	9/29/18 0845
3				

Comments

Cooler Temperature on Receipt 2.1 °C   Custody Seal Y or N   Received on Ice Y or N   Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

WO#: 2084995

PM: CMM **Due Date: 10/12/18**

CLIENT: PASI-MINN

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10-1-18

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☑Yes	☐No	☐N/A	1
Chain of Custody Present:	☑Yes	☐No	☐N/A	2
Chain of Custody Complete:	☑Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	5
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	6
Sufficient Volume:	☑Yes	☐No	☐N/A	7
Correct Containers Used:	☑Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☑No	☐N/A	9
Sample Labels match COC:	☑Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes	☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ______ H2SO4 ______
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	14
Trip Blank Present:	☐Yes	☑No		15

Client Notification/ Resolution:

Person Contacted: ______________________ Date/Time: ______________

Comments/ Resolution: ______________________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 05, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449445

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449445001	**MW6D-GW-092518**	Water	09/25/18 14:45	09/28/18 10:00
10449445002	**MW6U-GW-092518**	Water	09/25/18 15:45	09/28/18 10:00

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449445001	**MW6D-GW-092518**	EPA 8260B	AEZ	83	PASI-M
10449445002	**MW6U-GW-092518**	EPA 8260B	MJD	83	PASI-M

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449445001	**MW6D-GW-092518**					
EPA 8260B	Carbon tetrachloride	1.0	ug/L	0.50	10/04/18 22:41	
10449445002	**MW6U-GW-092518**					
EPA 8260B	Carbon disulfide	0.50J	ug/L	1.0	10/02/18 06:55	
EPA 8260B	Carbon tetrachloride	50.2	ug/L	0.50	10/02/18 06:55	M1
EPA 8260B	Chloroform	2.3J	ug/L	4.0	10/02/18 06:55	

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www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 566139

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449445002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3072188)
    - Carbon tetrachloride
    - Styrene
- MSD (Lab ID: 3072189)
    - Carbon tetrachloride
    - Styrene

Additional Comments:

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

Analyte Comments:

QC Batch: 566139

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3072186)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3072187)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3072188)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3072189)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW6U-GW-092518 (Lab ID: 10449445002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 567352

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3078682)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3078683)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3078684)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3078685)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW6D-GW-092518 (Lab ID: 10449445001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449445

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Sample: MW6D-GW-092518 **Lab ID: 10449445001** Collected: 09/25/18 14:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 22:41	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 22:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:41	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 22:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 22:41	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:41	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:41	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 22:41	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 22:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 22:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 22:41	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 22:41	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 22:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 22:41	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 22:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 22:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:41	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 22:41	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 22:41	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 22:41	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 22:41	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 22:41	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:41	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 22:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 22:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 22:41	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 22:41	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 22:41	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 22:41	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 22:41	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 22:41	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 22:41	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 22:41	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 22:41	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 22:41	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 22:41	75-15-0	
Carbon tetrachloride	**1.0**	ug/L	0.50	0.19	1		10/04/18 22:41	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:41	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 22:41	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 22:41	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 22:41	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 22:41	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Sample: MW6D-GW-092518 **Lab ID: 10449445001** Collected: 09/25/18 14:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 22:41	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 22:41	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 22:41	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 22:41	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 22:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 22:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 22:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 22:41	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:41	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 22:41	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 22:41	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 22:41	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:41	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 22:41	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 22:41	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 22:41	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 22:41	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 22:41	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 22:41	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 22:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 22:41	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:41	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 22:41	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 22:41	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 22:41	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 22:41	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:41	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:41	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 22:41	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 22:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:41	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 22:41	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 22:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 22:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/04/18 22:41	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/04/18 22:41	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/04/18 22:41	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Sample: MW6U-GW-092518 **Lab ID: 10449445002** Collected: 09/25/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/02/18 06:55	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		10/02/18 06:55	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/02/18 06:55	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/02/18 06:55	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/02/18 06:55	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/02/18 06:55	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/02/18 06:55	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		10/02/18 06:55	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		10/02/18 06:55	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/02/18 06:55	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		10/02/18 06:55	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		10/02/18 06:55	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/02/18 06:55	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		10/02/18 06:55	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/02/18 06:55	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/02/18 06:55	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/02/18 06:55	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/02/18 06:55	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/02/18 06:55	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/02/18 06:55	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/02/18 06:55	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/02/18 06:55	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/02/18 06:55	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/02/18 06:55	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/02/18 06:55	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/02/18 06:55	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/02/18 06:55	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/02/18 06:55	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		10/02/18 06:55	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/02/18 06:55	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/02/18 06:55	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/02/18 06:55	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/02/18 06:55	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/02/18 06:55	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/02/18 06:55	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/02/18 06:55	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/02/18 06:55	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/02/18 06:55	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/02/18 06:55	74-83-9	
Carbon disulfide	**0.50J**	ug/L	1.0	0.078	1		10/02/18 06:55	75-15-0	
Carbon tetrachloride	**50.2**	ug/L	0.50	0.19	1		10/02/18 06:55	56-23-5	M1
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/02/18 06:55	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/02/18 06:55	75-00-3	
Chloroform	**2.3J**	ug/L	4.0	0.45	1		10/02/18 06:55	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/02/18 06:55	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		10/02/18 06:55	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Sample: MW6U-GW-092518 **Lab ID: 10449445002** Collected: 09/25/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/02/18 06:55	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/02/18 06:55	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/02/18 06:55	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/02/18 06:55	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/02/18 06:55	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/02/18 06:55	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/02/18 06:55	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	0.50	0.18	1		10/02/18 06:55	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/02/18 06:55	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/02/18 06:55	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/02/18 06:55	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		10/02/18 06:55	100-42-5	M1
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/02/18 06:55	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/02/18 06:55	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/02/18 06:55	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/02/18 06:55	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/02/18 06:55	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/02/18 06:55	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/02/18 06:55	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		10/02/18 06:55	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/02/18 06:55	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		10/02/18 06:55	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		10/02/18 06:55	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		10/02/18 06:55	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		10/02/18 06:55	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		10/02/18 06:55	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	0.50	0.15	1		10/02/18 06:55	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		10/02/18 06:55	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/02/18 06:55	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/02/18 06:55	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		10/02/18 06:55	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/02/18 06:55	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	0.50	0.18	1		10/02/18 06:55	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/02/18 06:55	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-125		1		10/02/18 06:55	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		10/02/18 06:55	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		10/02/18 06:55	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

QC Batch: 566139 — Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B — Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449445002

METHOD BLANK: 3072186 — Matrix: Water
Associated Lab Samples: 10449445002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/02/18 06:20	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	10/02/18 06:20	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/02/18 06:20	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/02/18 06:20	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/02/18 06:20	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/02/18 06:20	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/02/18 06:20	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	10/02/18 06:20	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	10/02/18 06:20	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/02/18 06:20	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	10/02/18 06:20	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	10/02/18 06:20	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/02/18 06:20	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	10/02/18 06:20	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/02/18 06:20	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/02/18 06:20	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/02/18 06:20	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/02/18 06:20	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/02/18 06:20	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/02/18 06:20	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/02/18 06:20	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/02/18 06:20	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/02/18 06:20	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/02/18 06:20	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/02/18 06:20	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/02/18 06:20	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/02/18 06:20	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/02/18 06:20	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	10/02/18 06:20	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/02/18 06:20	
Acetone	ug/L	<9.2	20.0	9.2	10/02/18 06:20	
Acrolein	ug/L	<1.2	10.0	1.2	10/02/18 06:20	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/02/18 06:20	
Benzene	ug/L	<0.10	0.50	0.10	10/02/18 06:20	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/02/18 06:20	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/02/18 06:20	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/02/18 06:20	
Bromoform	ug/L	<0.80	4.0	0.80	10/02/18 06:20	
Bromomethane	ug/L	<1.8	4.0	1.8	10/02/18 06:20	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/02/18 06:20	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/02/18 06:20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

METHOD BLANK: 3072186 Matrix: Water
Associated Lab Samples: 10449445002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/02/18 06:20	
Chloroethane	ug/L	<0.49	1.0	0.49	10/02/18 06:20	
Chloroform	ug/L	<0.45	4.0	0.45	10/02/18 06:20	MN
Chloromethane	ug/L	<0.16	4.0	0.16	10/02/18 06:20	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/02/18 06:20	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	10/02/18 06:20	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	10/02/18 06:20	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/02/18 06:20	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/02/18 06:20	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/02/18 06:20	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/02/18 06:20	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/02/18 06:20	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/02/18 06:20	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/02/18 06:20	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	10/02/18 06:20	
m&p-Xylene	ug/L	<0.31	1.0	0.31	10/02/18 06:20	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/02/18 06:20	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/02/18 06:20	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	10/02/18 06:20	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	10/02/18 06:20	
Naphthalene	ug/L	<0.48	1.0	0.48	10/02/18 06:20	
o-Xylene	ug/L	<0.16	0.50	0.16	10/02/18 06:20	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	10/02/18 06:20	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	10/02/18 06:20	
Styrene	ug/L	<0.19	0.50	0.19	10/02/18 06:20	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/02/18 06:20	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/02/18 06:20	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	10/02/18 06:20	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/02/18 06:20	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/02/18 06:20	
Toluene	ug/L	<0.083	0.50	0.083	10/02/18 06:20	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/02/18 06:20	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	10/02/18 06:20	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/02/18 06:20	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/02/18 06:20	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/02/18 06:20	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/02/18 06:20	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/02/18 06:20	
Xylene (Total)	ug/L	<0.31	1.5	0.31	10/02/18 06:20	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		10/02/18 06:20	
4-Bromofluorobenzene (S)	%.	102	75-125		10/02/18 06:20	
Toluene-d8 (S)	%.	100	75-125		10/02/18 06:20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

LABORATORY CONTROL SAMPLE: 3072187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.2	111	75-125	
1,1,1-Trichloroethane	ug/L	20	22.1	111	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.0	105	75-125	
1,1,2-Trichloroethane	ug/L	20	22.1	111	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	21.3	106	72-125	
1,1-Dichloroethane	ug/L	20	21.5	108	75-125	
1,1-Dichloroethene	ug/L	20	21.3	107	73-125	
1,1-Dichloropropene	ug/L	20	21.6	108	73-125	
1,2,3-Trichlorobenzene	ug/L	20	21.2	106	72-130	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	21.3	107	75-125	
1,2,4-Trimethylbenzene	ug/L	20	21.4	107	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	55.2	110	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	21.0	105	75-125	
1,2-Dichlorobenzene	ug/L	20	21.1	105	75-125	
1,2-Dichloroethane	ug/L	20	21.4	107	75-125	
1,2-Dichloroethene (Total)	ug/L	40	43.3	108	75-125	N2
1,2-Dichloropropane	ug/L	20	20.7	104	75-125	
1,3,5-Trimethylbenzene	ug/L	20	22.1	111	75-125	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-125	
1,3-Dichloropropane	ug/L	20	21.8	109	75-125	
1,4-Dichlorobenzene	ug/L	20	20.9	105	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	367	92	75-125	
2,2,4-Trimethylpentane	ug/L	20	19.7	98	64-130	N2
2,2-Dichloropropane	ug/L	20	18.5	93	68-129	
2-Butanone (MEK)	ug/L	100	105	105	65-126	
2-Chlorotoluene	ug/L	20	21.6	108	75-125	
2-Hexanone	ug/L	100	107	107	75-134	
4-Chlorotoluene	ug/L	20	21.6	108	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	75-131	
Acetone	ug/L	100	107	107	68-150	
Acrolein	ug/L	200	213	106	63-149	
Acrylonitrile	ug/L	202	212	105	75-125	
Benzene	ug/L	20	20.6	103	75-125	
Bromobenzene	ug/L	20	21.8	109	75-125	
Bromochloromethane	ug/L	20	22.5	112	75-125	
Bromodichloromethane	ug/L	20	21.2	106	75-125	
Bromoform	ug/L	20	21.5	108	70-125	
Bromomethane	ug/L	20	12.0	60	30-145	
Carbon disulfide	ug/L	20	20.3	101	67-125	
Carbon tetrachloride	ug/L	20	21.9	109	75-125	
Chlorobenzene	ug/L	20	20.6	103	75-125	
Chloroethane	ug/L	20	19.1	95	73-131	
Chloroform	ug/L	20	21.6	108	75-125	
Chloromethane	ug/L	20	17.3	86	52-132	
cis-1,2-Dichloroethene	ug/L	20	21.2	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.8	104	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

LABORATORY CONTROL SAMPLE: 3072187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.8	109	75-125	
Dibromomethane	ug/L	20	22.0	110	75-125	
Dichlorodifluoromethane	ug/L	20	19.8	99	64-127	
Dichlorofluoromethane	ug/L	20	21.2	106	75-125	N2
Diisopropyl ether	ug/L	20	20.6	103	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.8	104	75-125	
Ethylbenzene	ug/L	20	21.8	109	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.5	102	75-130	
Isopropylbenzene (Cumene)	ug/L	20	22.2	111	75-125	
m&p-Xylene	ug/L	40	42.4	106	75-125	
Methyl-tert-butyl ether	ug/L	20	20.5	102	75-125	
Methylene Chloride	ug/L	20	20.2	101	72-125	
n-Butylbenzene	ug/L	20	21.9	110	75-125	
n-Propylbenzene	ug/L	20	22.2	111	75-125	
Naphthalene	ug/L	20	21.0	105	61-136	
o-Xylene	ug/L	20	21.5	108	75-125	
p-Isopropyltoluene	ug/L	20	21.8	109	75-125	
sec-Butylbenzene	ug/L	20	22.0	110	75-125	
Styrene	ug/L	20	21.9	110	75-125	
tert-Amylmethyl ether	ug/L	20	20.0	100	75-125	
tert-Butyl Alcohol	ug/L	200	208	104	75-125	
tert-Butylbenzene	ug/L	20	21.3	107	75-125	
Tetrachloroethene	ug/L	20	22.1	111	75-125	
Tetrahydrofuran	ug/L	200	208	104	64-150	
Toluene	ug/L	20	21.0	105	75-125	
trans-1,2-Dichloroethene	ug/L	20	22.1	111	75-125	
trans-1,3-Dichloropropene	ug/L	20	21.0	105	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.0	98	57-126	
Trichloroethene	ug/L	20	21.6	108	75-125	
Trichlorofluoromethane	ug/L	20	20.6	103	74-126	
Vinyl acetate	ug/L	20	21.0	105	72-129	
Vinyl chloride	ug/L	20	19.0	95	71-130	
Xylene (Total)	ug/L	60	64.0	107	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072188 3072189

Parameter	Units	10449445002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.5	20.1	103	101	75-125	2	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.7	21.0	109	105	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.2	18.0	96	90	75-125	6	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.6	19.7	103	98	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072188 3072189

Parameter	Units	10449445002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	20.5	105	103	75-136	2	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.4	19.8	102	99	75-125	3	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.7	20.4	103	102	75-127	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.7	20.2	103	101	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20.9	18.9	104	95	72-137	10	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.2	18.5	101	92	75-125	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.5	19.4	102	97	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.2	19.3	101	96	71-125	5	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	50.9	47.2	102	94	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	19.0	99	95	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.7	18.6	99	93	75-125	6	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.4	19.1	97	95	69-125	2	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.6	40.5	99	101	75-125	2	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.3	19.1	96	95	75-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.0	19.9	105	99	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.0	18.6	100	93	75-125	7	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	20.0	19.1	100	95	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.2	19.0	101	95	74-125	6	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	326	293	82	73	67-128	11	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.1	18.0	95	90	65-150	6	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.6	17.1	88	86	65-136	3	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	90.5	86.4	90	86	59-125	5	30	
2-Chlorotoluene	ug/L	<0.16	20	20	20.9	20.0	104	100	73-126	4	30	
2-Hexanone	ug/L	<0.88	100	100	98.6	94.4	99	94	68-138	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	20.4	19.3	102	97	75-125	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	98.8	93.0	99	93	73-125	6	30	
Acetone	ug/L	<9.2	100	100	96.6	94.5	95	92	75-150	2	30	
Acrolein	ug/L	<1.2	200	200	171	164	86	82	53-150	4	30	
Acrylonitrile	ug/L	<0.91	202	202	191	182	95	90	69-127	5	30	
Benzene	ug/L	<0.10	20	20	19.2	19.2	96	96	74-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	20.1	19.8	101	99	75-125	2	30	
Bromochloromethane	ug/L	<0.27	20	20	21.2	21.1	106	105	75-125	1	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.5	19.1	98	95	75-125	2	30	
Bromoform	ug/L	<0.80	20	20	19.7	18.9	98	94	68-125	4	30	
Bromomethane	ug/L	<1.8	20	20	14.1	16.1	71	81	37-149	13	30	
Carbon disulfide	ug/L	0.50J	20	20	19.9	19.5	97	95	66-139	2	30	
Carbon tetrachloride	ug/L	50.2	20	20	76.3	83.0	131	164	75-127	8	30	M1
Chlorobenzene	ug/L	<0.17	20	20	19.6	19.3	98	97	75-125	1	30	
Chloroethane	ug/L	<0.49	20	20	17.7	17.8	88	89	73-134	1	30	
Chloroform	ug/L	2.3J	20	20	20.3	20.8	90	92	71-125	2	30	
Chloromethane	ug/L	<0.16	20	20	15.0	15.7	75	78	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	19.8	99	99	75-125	0	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	18.8	18.4	94	92	71-125	2	30	
Dibromochloromethane	ug/L	<0.12	20	20	20.2	19.2	101	96	75-125	5	30	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072188 3072189

Parameter	Units	10449445002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	20.2	19.7	101	98	75-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.6	17.8	93	89	70-150	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	18.9	19.7	95	99	75-126	4	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.9	18.6	94	93	66-131	2	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.8	18.5	94	93	74-125	1	30	
Ethylbenzene	ug/L	<0.14	20	20	20.9	20.2	104	101	75-125	3	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.9	18.4	99	92	60-150	8	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.0	21.0	105	105	75-125	0	30	
m&p-Xylene	ug/L	<0.31	40	40	39.9	40.0	100	100	75-125	0	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.9	18.8	95	94	75-125	1	30	
Methylene Chloride	ug/L	<0.98	20	20	18.8	18.8	93	93	72-125	0	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.6	20.3	108	101	73-140	6	30	
n-Propylbenzene	ug/L	<0.10	20	20	21.3	20.1	106	100	75-126	6	30	
Naphthalene	ug/L	<0.48	20	20	20.5	18.6	102	93	61-136	9	30	
o-Xylene	ug/L	<0.16	20	20	20.1	20.1	101	101	75-125	0	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.0	20.0	105	100	73-133	5	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.4	20.3	107	101	75-132	6	30	
Styrene	ug/L	<0.19	20	20	9.4	9.0	47	45	71-125	5	30	M1
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.2	17.9	91	89	71-125	2	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	180	91	90	72-130	2	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.6	19.9	103	99	75-126	3	30	
Tetrachloroethene	ug/L	<0.17	20	20	20.9	20.6	105	103	75-125	1	30	
Tetrahydrofuran	ug/L	<2.2	200	200	186	182	93	91	75-150	2	30	
Toluene	ug/L	<0.083	20	20	20.0	19.5	100	97	74-125	3	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.7	99	103	75-125	5	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.3	19.1	97	95	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	44.6	41.3	89	83	57-125	8	30	
Trichloroethene	ug/L	<0.15	20	20	20.6	20.4	103	102	75-125	1	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.4	19.9	97	100	75-135	3	30	
Vinyl acetate	ug/L	<1.1	20	20	12.6	12.3	63	61	57-136	3	30	
Vinyl chloride	ug/L	<0.092	20	20	17.6	18.2	88	91	74-141	4	30	
Xylene (Total)	ug/L	<0.31	60	60	60.1	60.1	100	100	75-125	0	30	
1,2-Dichloroethane-d4 (S)	%.						100	99	75-125			
4-Bromofluorobenzene (S)	%.						101	99	75-125			
Toluene-d8 (S)	%.						102	101	75-125			

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

QC Batch: 567352 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449445001

METHOD BLANK: 3078682 Matrix: Water
Associated Lab Samples: 10449445001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/04/18 21:04	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/04/18 21:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/04/18 21:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/04/18 21:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/04/18 21:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/04/18 21:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/04/18 21:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/04/18 21:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/04/18 21:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/04/18 21:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/04/18 21:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/04/18 21:04	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/04/18 21:04	
Acetone	ug/L	<9.2	20.0	9.2	10/04/18 21:04	
Acrolein	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/04/18 21:04	
Benzene	ug/L	<0.10	0.50	0.10	10/04/18 21:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/04/18 21:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/04/18 21:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
Bromoform	ug/L	<0.80	4.0	0.80	10/04/18 21:04	
Bromomethane	ug/L	<1.8	4.0	1.8	10/04/18 21:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/04/18 21:04	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/04/18 21:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

METHOD BLANK: 3078682 Matrix: Water
Associated Lab Samples: 10449445001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Chloroethane	ug/L	<0.49	1.0	0.49	10/04/18 21:04	
Chloroform	ug/L	<0.45	1.0	0.45	10/04/18 21:04	
Chloromethane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/04/18 21:04	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/04/18 21:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/04/18 21:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/04/18 21:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/04/18 21:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/04/18 21:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/04/18 21:04	
Naphthalene	ug/L	<0.48	1.0	0.48	10/04/18 21:04	
o-Xylene	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Styrene	ug/L	<0.19	1.0	0.19	10/04/18 21:04	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/04/18 21:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/04/18 21:04	
Toluene	ug/L	<0.083	0.50	0.083	10/04/18 21:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/04/18 21:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/04/18 21:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/04/18 21:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/04/18 21:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/04/18 21:04	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/04/18 21:04	
1,2-Dichloroethane-d4 (S)	%.	100	75-125		10/04/18 21:04	
4-Bromofluorobenzene (S)	%.	100	75-125		10/04/18 21:04	
Toluene-d8 (S)	%.	104	75-125		10/04/18 21:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,1-Trichloroethane	ug/L	10	9.3	93	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.6	96	72-125	
1,1-Dichloroethane	ug/L	10	9.7	97	75-125	
1,1-Dichloroethene	ug/L	10	9.6	96	73-125	
1,1-Dichloropropene	ug/L	10	9.5	95	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.0	90	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.6	86	75-125	
1,2,4-Trimethylbenzene	ug/L	10	9.0	90	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	22.4	90	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.8	88	75-125	
1,2-Dichlorobenzene	ug/L	10	9.5	95	75-125	
1,2-Dichloroethane	ug/L	10	9.1	91	75-125	
1,2-Dichloroethene (Total)	ug/L	20	18.4	92	75-125	N2
1,2-Dichloropropane	ug/L	10	9.9	99	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.7	87	75-125	
1,3-Dichlorobenzene	ug/L	10	10	100	75-125	
1,3-Dichloropropane	ug/L	10	9.4	94	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	176J	88	75-125	
2,2,4-Trimethylpentane	ug/L	10	9.4	94	64-130	N2
2,2-Dichloropropane	ug/L	10	9.7	97	68-129	
2-Butanone (MEK)	ug/L	50	47.6	95	65-126	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
2-Hexanone	ug/L	50	46.0	92	75-134	
4-Chlorotoluene	ug/L	10	9.4	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	48.3	97	68-150	
Acrolein	ug/L	100	85.1	85	63-149	
Acrylonitrile	ug/L	101	93.7	93	75-125	
Benzene	ug/L	10	9.2	92	75-125	
Bromobenzene	ug/L	10	9.6	96	75-125	
Bromochloromethane	ug/L	10	9.3	93	75-125	
Bromodichloromethane	ug/L	10	9.2	92	75-125	
Bromoform	ug/L	10	9.7	97	70-125	
Bromomethane	ug/L	10	9.9	99	30-145	
Carbon disulfide	ug/L	10	7.1	71	67-125	
Carbon tetrachloride	ug/L	10	10.4	104	75-125	
Chlorobenzene	ug/L	10	9.5	95	75-125	
Chloroethane	ug/L	10	10.6	106	73-131	
Chloroform	ug/L	10	8.6	86	75-125	
Chloromethane	ug/L	10	10.5	105	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.8	88	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	9.7	97	75-125	
Dibromomethane	ug/L	10	9.4	94	75-125	
Dichlorodifluoromethane	ug/L	10	10	100	64-127	
Dichlorofluoromethane	ug/L	10	10.0	100	75-125	N2
Diisopropyl ether	ug/L	10	8.7	87	75-125	
Ethyl-tert-butyl ether	ug/L	10	8.9	89	75-125	
Ethylbenzene	ug/L	10	9.5	95	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.5	105	75-130	
Isopropylbenzene (Cumene)	ug/L	10	9.0	90	75-125	
m&p-Xylene	ug/L	20	18.1	91	75-125	
Methyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Methylene Chloride	ug/L	10	8.5	85	72-125	
n-Butylbenzene	ug/L	10	9.0	90	75-125	
n-Propylbenzene	ug/L	10	9.0	90	75-125	
Naphthalene	ug/L	10	8.2	82	61-136	
o-Xylene	ug/L	10	9.0	90	75-125	
p-Isopropyltoluene	ug/L	10	9.5	95	75-125	
sec-Butylbenzene	ug/L	10	9.3	93	75-125	
Styrene	ug/L	10	8.6	86	75-125	
tert-Amylmethyl ether	ug/L	10	8.8	88	75-125	
tert-Butyl Alcohol	ug/L	100	92.7	93	75-125	
tert-Butylbenzene	ug/L	10	9.0	90	75-125	
Tetrachloroethene	ug/L	10	10.3	103	75-125	
Tetrahydrofuran	ug/L	100	91.6	92	64-150	
Toluene	ug/L	10	8.5	85	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.1	91	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.2	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	21.9	87	57-126	
Trichloroethene	ug/L	10	9.9	99	75-125	
Trichlorofluoromethane	ug/L	10	10.5	105	74-126	
Vinyl acetate	ug/L	10	8.4J	84	72-129	
Vinyl chloride	ug/L	10	10.6	106	71-130	
Xylene (Total)	ug/L	30	27.2	91	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.2	19.4	101	97	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.2	20.5	106	102	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.2	18.8	96	94	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.0	20.0	100	100	75-125	0	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.4	20.1	107	101	75-136	6	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.9	20.9	110	105	75-125	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	23.2	22.2	116	111	75-127	4	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.9	20.5	104	103	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.2	18.9	96	94	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.3	18.4	91	92	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	19.2	18.9	96	95	69-131	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.8	19.4	99	97	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	44.0	45.4	88	91	61-127	3	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.3	17.8	91	89	75-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	20.2	101	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.6	18.0	93	90	69-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.1	40.5	105	101	75-125	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.1	20.7	105	103	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.9	19.5	100	98	75-125	2	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.5	20.9	107	104	75-125	3	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.8	19.7	99	99	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.2	20.1	101	100	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	375	348	94	87	67-128	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.0	19.3	100	96	65-150	3	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.0	21.5	110	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.3	89.2	84	89	59-125	6	30	
2-Chlorotoluene	ug/L	<0.16	20	20	23.2	22.3	116	111	73-126	4	30	
2-Hexanone	ug/L	<0.88	100	100	91.4	94.5	91	95	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.9	19.5	100	97	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.5	89.9	87	90	73-125	3	30	
Acetone	ug/L	<9.2	100	100	99.6	93.1	100	93	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	176	176	88	88	53-150	0	30	
Acrylonitrile	ug/L	<0.91	202	202	183	185	90	92	69-127	1	30	
Benzene	ug/L	<0.10	20	20	20.8	19.9	104	100	74-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	20.6	20.2	103	101	75-125	2	30	
Bromochloromethane	ug/L	<0.27	20	20	20.0	19.3	100	96	75-125	4	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.3	19.7	101	98	75-125	3	30	
Bromoform	ug/L	<0.80	20	20	19.6	18.7	98	94	68-125	5	30	
Bromomethane	ug/L	<1.8	20	20	17.9	20.8	90	104	37-149	15	30	
Carbon disulfide	ug/L	<0.078	20	20	17.5	16.8	88	84	66-139	4	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.7	20.3	104	102	75-127	2	30	
Chlorobenzene	ug/L	<0.17	20	20	20.4	19.9	102	100	75-125	2	30	
Chloroethane	ug/L	<0.49	20	20	19.4	22.3	97	112	73-134	14	30	
Chloroform	ug/L	<0.45	20	20	19.3	18.8	96	94	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	18.8	22.2	94	111	58-133	17	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.9	20.2	104	101	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	18.3	17.8	92	89	71-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	20.1	19.6	100	98	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	19.3	18.9	96	95	75-125	2	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.2	20.9	91	105	70-150	14	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	18.1	21.0	90	105	75-126	15	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.6	18.8	93	94	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.1	18.3	90	92	74-125	1	30	
Ethylbenzene	ug/L	<0.14	20	20	22.1	21.1	110	106	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.7	22.8	118	114	60-150	4	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.8	20.3	104	101	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	41.3	39.8	103	100	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.8	18.8	94	94	75-125	0	30	
Methylene Chloride	ug/L	<0.98	20	20	18.2	17.8	90	88	72-125	2	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.4	20.8	107	104	73-140	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.7	19.9	103	99	75-126	4	30	
Naphthalene	ug/L	<0.48	20	20	17.3	17.7	87	89	61-136	2	30	
o-Xylene	ug/L	<0.16	20	20	19.9	19.2	100	96	75-125	4	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.2	20.5	106	103	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.4	20.5	107	102	75-132	5	30	
Styrene	ug/L	<0.19	20	20	19.3	18.7	97	94	71-125	3	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	17.8	87	89	71-125	3	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	200	199	100	100	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.7	19.9	103	100	75-126	4	30	
Tetrachloroethene	ug/L	<0.17	20	20	23.3	22.6	116	113	75-125	3	30	
Tetrahydrofuran	ug/L	<2.2	200	200	194	186	97	93	75-150	4	30	
Toluene	ug/L	<0.083	20	20	19.4	19.3	97	96	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.2	20.2	106	101	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.1	18.9	96	94	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	46.1	45.4	92	91	57-125	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.7	19.2	98	96	75-125	2	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.2	22.0	96	110	75-135	13	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.0	89	90	57-136	1	30	
Vinyl chloride	ug/L	<0.092	20	20	20.0	23.1	100	115	74-141	15	30	
Xylene (Total)	ug/L	<0.31	60	60	61.3	59.0	102	98	75-125	4	30	
1,2-Dichloroethane-d4 (S)	%.						98	99	75-125			
4-Bromofluorobenzene (S)	%.						101	100	75-125			
Toluene-d8 (S)	%.						97	96	75-125			

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449445001	**MW6D-GW-092518**	EPA 8260B	567352		
10449445002	**MW6U-GW-092518**	EPA 8260B	566139		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must

WO#: 10449445

10449445

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency	
State / Location	WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE (2018)	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	**Chloride, Sulfate, Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MW60-GW-092518	WT	G	9/25	1445	—	—	—	3				X				X											001
2	MW6U-GW-092518	↓	↓	↓	1545	—	—	—	~~3~~ 9				X				X											002
3	TB-092518(2)	↓	↓	↓	1400	—	—	—	2				X				X											003
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/26/18	1000	[signature] PACE	9/28/18	1000	5.8, 2.7, 0.4, 3.2	Y	Y	X
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/25/18

Sample Condition Upon Receipt – ESI Tech Specs

WO#: 10449445
PM: JMG Due Date: 10/12/18
CLIENT: UPRR_CH2M

Client Name: CH2M HILL - UPRR

Project #:

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4748/4770/4760/4759

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 5.6, 2.5, 0.6, 3.0 Cooler Temp Corrected (°C): 5.8, 2.7, 0.8, 3.2 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.2 Date and Initials of Person Examining Contents: EPT 9/28/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12. NO VOLUME PROVIDED FOR "TB-092518 (2)"
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. SEE EXCEPTIONS
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1230	Temp: 5.6, 2.5, 0.6, 3.0	Corrected Temp: 5.8, 2.7, 0.8, 3.2
Time: 1250	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/01/18

Note: Whenever there is a discrepancy affecting North Carolina compliance, this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: KU

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
MW6D-GW-092518	0	1	2	3
MW6U-GW-092518	0	6	3	9

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October 05, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449447

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449447001	**MW21D-GW-092618**	Water	09/26/18 09:00	09/28/18 10:00
10449447002	**MW16D-GW-092618**	Water	09/26/18 10:15	09/28/18 10:00
10449447003	**MW18D-GW-092618**	Water	09/26/18 11:00	09/28/18 10:00
10449447004	**MW15D-GW-092618**	Water	09/26/18 12:00	09/28/18 10:00
10449447005	**MW4D-GW-092618**	Water	09/26/18 12:45	09/28/18 10:00
10449447006	**MW17D-GW-092618**	Water	09/26/18 14:15	09/28/18 10:00
10449447007	**MW19D-GW-092618**	Water	09/26/18 15:00	09/28/18 10:00
10449447008	**MW5D-GW-092618**	Water	09/26/18 15:45	09/28/18 10:00
10449447009	**MW20D-GW-092618**	Water	09/26/18 16:45	09/28/18 10:00
10449447010	**FD3-092618**	Water	09/26/18 18:00	09/28/18 10:00
10449447012	**MW14D-GW-092618**	Water	09/26/18 17:45	09/28/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449447001	**MW21D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447002	**MW16D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447003	**MW18D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447004	**MW15D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447005	**MW4D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447006	**MW17D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447007	**MW19D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447008	**MW5D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447009	**MW20D-GW-092618**	EPA 8260B	AEZ	83	PASI-M
10449447010	**FD3-092618**	EPA 8260B	AEZ	83	PASI-M
10449447012	**MW14D-GW-092618**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449447004	**MW15D-GW-092618**					
EPA 8260B	Carbon tetrachloride	10.1	ug/L	0.50	10/04/18 23:29	
10449447005	**MW4D-GW-092618**					
EPA 8260B	Carbon tetrachloride	7.3	ug/L	0.50	10/04/18 23:53	
10449447006	**MW17D-GW-092618**					
EPA 8260B	Carbon disulfide	0.95J	ug/L	1.0	10/05/18 00:17	
10449447007	**MW19D-GW-092618**					
EPA 8260B	Carbon tetrachloride	448	ug/L	25.0	10/05/18 05:06	
EPA 8260B	Chloroform	17.0	ug/L	2.0	10/05/18 05:54	
10449447009	**MW20D-GW-092618**					
EPA 8260B	Carbon tetrachloride	30.7	ug/L	2.5	10/05/18 14:48	
10449447010	**FD3-092618**					
EPA 8260B	Carbon tetrachloride	28.8	ug/L	2.5	10/05/18 14:24	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

General Information:
11 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567038

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3076503)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3076504)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3076505)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

Analyte Comments:

QC Batch: 567038

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3076505)
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3076506)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW16D-GW-092618 (Lab ID: 10449447002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

QC Batch: 567352

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3078682)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FD3-092618 (Lab ID: 10449447010)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3078683)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3078684)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3078685)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW14D-GW-092618 (Lab ID: 10449447012)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW15D-GW-092618 (Lab ID: 10449447004)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW17D-GW-092618 (Lab ID: 10449447006)
  - 1,2-Dichloroethene (Total)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

Analyte Comments:

QC Batch: 567352

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MW17D-GW-092618 (Lab ID: 10449447006)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW18D-GW-092618 (Lab ID: 10449447003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW19D-GW-092618 (Lab ID: 10449447007)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW20D-GW-092618 (Lab ID: 10449447009)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW21D-GW-092618 (Lab ID: 10449447001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW4D-GW-092618 (Lab ID: 10449447005)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW5D-GW-092618 (Lab ID: 10449447008)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW21D-GW-092618 **Lab ID: 10449447001** Collected: 09/26/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 22:16	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 22:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:16	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 22:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 22:16	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:16	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:16	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:16	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 22:16	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 22:16	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:16	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 22:16	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 22:16	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 22:16	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 22:16	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 22:16	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 22:16	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 22:16	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:16	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 22:16	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:16	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 22:16	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 22:16	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 22:16	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 22:16	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:16	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 22:16	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 22:16	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 22:16	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 22:16	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 22:16	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 22:16	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 22:16	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 22:16	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 22:16	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 22:16	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 22:16	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 22:16	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 22:16	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/04/18 22:16	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:16	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 22:16	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 22:16	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 22:16	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 22:16	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW21D-GW-092618 **Lab ID: 10449447001** Collected: 09/26/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 22:16	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 22:16	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 22:16	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 22:16	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 22:16	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 22:16	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 22:16	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 22:16	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 22:16	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 22:16	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 22:16	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 22:16	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 22:16	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 22:16	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 22:16	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 22:16	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 22:16	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 22:16	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 22:16	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 22:16	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 22:16	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 22:16	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 22:16	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 22:16	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 22:16	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 22:16	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:16	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:16	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 22:16	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 22:16	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 22:16	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 22:16	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 22:16	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 22:16	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/04/18 22:16	17060-07-0	HS
Toluene-d8 (S)	106	%.	75-125		1		10/04/18 22:16	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/04/18 22:16	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW16D-GW-092618 **Lab ID: 10449447002** Collected: 09/26/18 10:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 11:39	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 11:39	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 11:39	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 11:39	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 11:39	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 11:39	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 11:39	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 11:39	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 11:39	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 11:39	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 11:39	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 11:39	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 11:39	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 11:39	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 11:39	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 11:39	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 11:39	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 11:39	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 11:39	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 11:39	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 11:39	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 11:39	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 11:39	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 11:39	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 11:39	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 11:39	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 11:39	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 11:39	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 11:39	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 11:39	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 11:39	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 11:39	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 11:39	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 11:39	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 11:39	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 11:39	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 11:39	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 11:39	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 11:39	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 11:39	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/04/18 11:39	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 11:39	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 11:39	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 11:39	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 11:39	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 11:39	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW16D-GW-092618 **Lab ID: 10449447002** Collected: 09/26/18 10:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 11:39	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 11:39	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 11:39	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 11:39	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 11:39	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 11:39	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 11:39	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 11:39	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 11:39	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 11:39	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 11:39	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 11:39	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 11:39	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 11:39	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 11:39	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 11:39	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 11:39	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 11:39	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 11:39	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 11:39	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 11:39	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 11:39	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 11:39	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 11:39	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 11:39	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 11:39	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 11:39	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 11:39	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 11:39	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 11:39	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 11:39	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 11:39	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 11:39	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 11:39	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/04/18 11:39	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1		10/04/18 11:39	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/04/18 11:39	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW18D-GW-092618 **Lab ID: 10449447003** Collected: 09/26/18 11:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 23:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 23:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 23:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 23:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 23:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:05	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 23:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 23:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 23:05	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 23:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 23:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 23:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 23:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 23:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 23:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 23:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 23:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 23:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 23:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 23:05	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/04/18 23:05	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 23:05	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 23:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 23:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449447

Sample: MW18D-GW-092618 **Lab ID: 10449447003** Collected: 09/26/18 11:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 23:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 23:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 23:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 23:05	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 23:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 23:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 23:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 23:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 23:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 23:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 23:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 23:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 23:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 23:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 23:05	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 23:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 23:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/04/18 23:05	17060-07-0	HS
Toluene-d8 (S)	108	%.	75-125		1		10/04/18 23:05	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		10/04/18 23:05	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW15D-GW-092618 **Lab ID: 10449447004** Collected: 09/26/18 12:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 23:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 23:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 23:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 23:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 23:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:29	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 23:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 23:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 23:29	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 23:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 23:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 23:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 23:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 23:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 23:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 23:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 23:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 23:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 23:29	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 23:29	75-15-0	
Carbon tetrachloride	**10.1**	ug/L	0.50	0.19	1		10/04/18 23:29	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 23:29	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 23:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 23:29	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449447

Sample: MW15D-GW-092618 **Lab ID: 10449447004** Collected: 09/26/18 12:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 23:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 23:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 23:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 23:29	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 23:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 23:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 23:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 23:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 23:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 23:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 23:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 23:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 23:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 23:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 23:29	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 23:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 23:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/04/18 23:29	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		10/04/18 23:29	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1		10/04/18 23:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW4D-GW-092618 **Lab ID: 10449447005** Collected: 09/26/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 23:53	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:53	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 23:53	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:53	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:53	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:53	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 23:53	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 23:53	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:53	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 23:53	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:53	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:53	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:53	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:53	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:53	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:53	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:53	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 23:53	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:53	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 23:53	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 23:53	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 23:53	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 23:53	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:53	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 23:53	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 23:53	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 23:53	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:53	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 23:53	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 23:53	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 23:53	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 23:53	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 23:53	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 23:53	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 23:53	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 23:53	75-15-0	
Carbon tetrachloride	**7.3**	ug/L	0.50	0.19	1		10/04/18 23:53	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:53	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 23:53	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 23:53	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 23:53	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 23:53	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW4D-GW-092618 **Lab ID: 10449447005** Collected: 09/26/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:53	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 23:53	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 23:53	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 23:53	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 23:53	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 23:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 23:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:53	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 23:53	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 23:53	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 23:53	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 23:53	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 23:53	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 23:53	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 23:53	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 23:53	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 23:53	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 23:53	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 23:53	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 23:53	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 23:53	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 23:53	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 23:53	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 23:53	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 23:53	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 23:53	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:53	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:53	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 23:53	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 23:53	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 23:53	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 23:53	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 23:53	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 23:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/04/18 23:53	17060-07-0	HS
Toluene-d8 (S)	104	%.	75-125		1		10/04/18 23:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/04/18 23:53	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW17D-GW-092618 **Lab ID: 10449447006** Collected: 09/26/18 14:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 00:17	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 00:17	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:17	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 00:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 00:17	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:17	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:17	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:17	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 00:17	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 00:17	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:17	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:17	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 00:17	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 00:17	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 00:17	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 00:17	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 00:17	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 00:17	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 00:17	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:17	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 00:17	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:17	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 00:17	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 00:17	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 00:17	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 00:17	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:17	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 00:17	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 00:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 00:17	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 00:17	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 00:17	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 00:17	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 00:17	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 00:17	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 00:17	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 00:17	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 00:17	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 00:17	74-83-9	
Carbon disulfide	**0.95J**	ug/L	1.0	0.078	1		10/05/18 00:17	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 00:17	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:17	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 00:17	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 00:17	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 00:17	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 00:17	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449447

Sample: MW17D-GW-092618 **Lab ID: 10449447006** Collected: 09/26/18 14:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 00:17	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 00:17	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 00:17	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 00:17	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 00:17	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 00:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 00:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 00:17	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:17	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 00:17	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 00:17	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 00:17	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:17	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 00:17	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 00:17	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 00:17	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 00:17	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 00:17	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 00:17	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 00:17	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 00:17	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:17	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 00:17	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 00:17	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 00:17	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 00:17	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:17	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:17	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 00:17	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 00:17	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:17	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 00:17	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 00:17	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 00:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 00:17	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/05/18 00:17	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/05/18 00:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW19D-GW-092618 **Lab ID: 10449447007** Collected: 09/26/18 15:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.39**	ug/L	1.0	0.39	2		10/05/18 05:54	630-20-6	
1,1,1-Trichloroethane	**<0.27**	ug/L	2.0	0.27	2		10/05/18 05:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.34**	ug/L	1.0	0.34	2		10/05/18 05:54	79-34-5	
1,1,2-Trichloroethane	**<0.36**	ug/L	1.0	0.36	2		10/05/18 05:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.43**	ug/L	2.0	0.43	2		10/05/18 05:54	76-13-1	
1,1-Dichloroethane	**<0.34**	ug/L	1.0	0.34	2		10/05/18 05:54	75-34-3	
1,1-Dichloroethene	**<0.32**	ug/L	1.0	0.32	2		10/05/18 05:54	75-35-4	
1,1-Dichloropropene	**<0.40**	ug/L	2.0	0.40	2		10/05/18 05:54	563-58-6	
1,2,3-Trichlorobenzene	**<0.41**	ug/L	2.0	0.41	2		10/05/18 05:54	87-61-6	
1,2,3-Trichloropropane	**<0.51**	ug/L	8.0	0.51	2		10/05/18 05:54	96-18-4	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	2.0	0.40	2		10/05/18 05:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.39**	ug/L	2.0	0.39	2		10/05/18 05:54	95-63-6	
1,2-Dibromo-3-chloropropane	**<3.3**	ug/L	8.0	3.3	2		10/05/18 05:54	96-12-8	
1,2-Dibromoethane (EDB)	**<0.48**	ug/L	2.0	0.48	2		10/05/18 05:54	106-93-4	
1,2-Dichlorobenzene	**<0.27**	ug/L	1.0	0.27	2		10/05/18 05:54	95-50-1	
1,2-Dichloroethane	**<0.44**	ug/L	1.0	0.44	2		10/05/18 05:54	107-06-2	
1,2-Dichloroethene (Total)	**<0.54**	ug/L	2.0	0.54	2		10/05/18 05:54	540-59-0	N2
1,2-Dichloropropane	**<0.33**	ug/L	8.0	0.33	2		10/05/18 05:54	78-87-5	
1,3,5-Trimethylbenzene	**<0.24**	ug/L	1.0	0.24	2		10/05/18 05:54	108-67-8	
1,3-Dichlorobenzene	**<0.32**	ug/L	1.0	0.32	2		10/05/18 05:54	541-73-1	
1,3-Dichloropropane	**<0.14**	ug/L	1.0	0.14	2		10/05/18 05:54	142-28-9	
1,4-Dichlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 05:54	106-46-7	
1,4-Dioxane (p-Dioxane)	**<32.6**	ug/L	400	32.6	2		10/05/18 05:54	123-91-1	
2,2,4-Trimethylpentane	**<0.38**	ug/L	8.0	0.38	2		10/05/18 05:54	540-84-1	N2
2,2-Dichloropropane	**<0.34**	ug/L	2.0	0.34	2		10/05/18 05:54	594-20-7	
2-Butanone (MEK)	**<2.0**	ug/L	10.0	2.0	2		10/05/18 05:54	78-93-3	
2-Chlorotoluene	**<0.33**	ug/L	1.0	0.33	2		10/05/18 05:54	95-49-8	
2-Hexanone	**<1.8**	ug/L	10.0	1.8	2		10/05/18 05:54	591-78-6	
4-Chlorotoluene	**<0.27**	ug/L	2.0	0.27	2		10/05/18 05:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.84**	ug/L	10.0	0.84	2		10/05/18 05:54	108-10-1	
Acetone	**<18.5**	ug/L	40.0	18.5	2		10/05/18 05:54	67-64-1	
Acrolein	**<2.4**	ug/L	20.0	2.4	2		10/05/18 05:54	107-02-8	
Acrylonitrile	**<1.8**	ug/L	20.0	1.8	2		10/05/18 05:54	107-13-1	
Benzene	**<0.20**	ug/L	1.0	0.20	2		10/05/18 05:54	71-43-2	
Bromobenzene	**<0.41**	ug/L	1.0	0.41	2		10/05/18 05:54	108-86-1	
Bromochloromethane	**<0.55**	ug/L	2.0	0.55	2		10/05/18 05:54	74-97-5	
Bromodichloromethane	**<0.43**	ug/L	1.0	0.43	2		10/05/18 05:54	75-27-4	
Bromoform	**<1.6**	ug/L	8.0	1.6	2		10/05/18 05:54	75-25-2	
Bromomethane	**<3.6**	ug/L	8.0	3.6	2		10/05/18 05:54	74-83-9	
Carbon disulfide	**<0.16**	ug/L	2.0	0.16	2		10/05/18 05:54	75-15-0	
Carbon tetrachloride	**448**	ug/L	25.0	9.4	50		10/05/18 05:06	56-23-5	
Chlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 05:54	108-90-7	
Chloroethane	**<0.98**	ug/L	2.0	0.98	2		10/05/18 05:54	75-00-3	
Chloroform	**17.0**	ug/L	2.0	0.90	2		10/05/18 05:54	67-66-3	
Chloromethane	**<0.31**	ug/L	8.0	0.31	2		10/05/18 05:54	74-87-3	
Dibromochloromethane	**<0.25**	ug/L	2.0	0.25	2		10/05/18 05:54	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW19D-GW-092618 **Lab ID: 10449447007** Collected: 09/26/18 15:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.33**	ug/L	2.0	0.33	2		10/05/18 05:54	74-95-3	
Dichlorodifluoromethane	**<0.47**	ug/L	2.0	0.47	2		10/05/18 05:54	75-71-8	
Dichlorofluoromethane	**<0.28**	ug/L	2.0	0.28	2		10/05/18 05:54	75-43-4	N2
Diisopropyl ether	**<0.27**	ug/L	2.0	0.27	2		10/05/18 05:54	108-20-3	
Ethyl-tert-butyl ether	**<0.36**	ug/L	1.0	0.36	2		10/05/18 05:54	637-92-3	
Ethylbenzene	**<0.28**	ug/L	1.0	0.28	2		10/05/18 05:54	100-41-4	
Hexachloro-1,3-butadiene	**<0.62**	ug/L	2.0	0.62	2		10/05/18 05:54	87-68-3	
Isopropylbenzene (Cumene)	**<0.37**	ug/L	2.0	0.37	2		10/05/18 05:54	98-82-8	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.0	0.32	2		10/05/18 05:54	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	8.0	2.0	2		10/05/18 05:54	75-09-2	
Naphthalene	**<0.96**	ug/L	2.0	0.96	2		10/05/18 05:54	91-20-3	
Styrene	**<0.37**	ug/L	2.0	0.37	2		10/05/18 05:54	100-42-5	
Tetrachloroethene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 05:54	127-18-4	
Tetrahydrofuran	**<4.4**	ug/L	20.0	4.4	2		10/05/18 05:54	109-99-9	
Toluene	**<0.17**	ug/L	1.0	0.17	2		10/05/18 05:54	108-88-3	
Trichloroethene	**<0.30**	ug/L	0.80	0.30	2		10/05/18 05:54	79-01-6	
Trichlorofluoromethane	**<0.46**	ug/L	1.0	0.46	2		10/05/18 05:54	75-69-4	
Vinyl acetate	**<2.2**	ug/L	20.0	2.2	2		10/05/18 05:54	108-05-4	
Vinyl chloride	**<0.18**	ug/L	0.40	0.18	2		10/05/18 05:54	75-01-4	
Xylene (Total)	**<0.62**	ug/L	6.0	0.62	2		10/05/18 05:54	1330-20-7	
cis-1,2-Dichloroethene	**<0.31**	ug/L	1.0	0.31	2		10/05/18 05:54	156-59-2	
cis-1,3-Dichloropropene	**<0.41**	ug/L	2.0	0.41	2		10/05/18 05:54	10061-01-5	
m&p-Xylene	**<0.62**	ug/L	4.0	0.62	2		10/05/18 05:54	179601-23-1	
n-Butylbenzene	**<0.48**	ug/L	2.0	0.48	2		10/05/18 05:54	104-51-8	
n-Propylbenzene	**<0.20**	ug/L	2.0	0.20	2		10/05/18 05:54	103-65-1	
o-Xylene	**<0.32**	ug/L	2.0	0.32	2		10/05/18 05:54	95-47-6	
p-Isopropyltoluene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 05:54	99-87-6	
sec-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 05:54	135-98-8	
tert-Amylmethyl ether	**<0.22**	ug/L	1.0	0.22	2		10/05/18 05:54	994-05-8	
tert-Butyl Alcohol	**<2.5**	ug/L	20.0	2.5	2		10/05/18 05:54	75-65-0	
tert-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 05:54	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	2		10/05/18 05:54	156-60-5	
trans-1,3-Dichloropropene	**<0.36**	ug/L	2.0	0.36	2		10/05/18 05:54	10061-02-6	
trans-1,4-Dichloro-2-butene	**<4.1**	ug/L	20.0	4.1	2		10/05/18 05:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		2		10/05/18 05:54	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		2		10/05/18 05:54	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		2		10/05/18 05:54	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW5D-GW-092618 **Lab ID: 10449447008** Collected: 09/26/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 00:41	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 00:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:41	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 00:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 00:41	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:41	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:41	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 00:41	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 00:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 00:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 00:41	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 00:41	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 00:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 00:41	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 00:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 00:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:41	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 00:41	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 00:41	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 00:41	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 00:41	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 00:41	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:41	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 00:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 00:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 00:41	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 00:41	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 00:41	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 00:41	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 00:41	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 00:41	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 00:41	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 00:41	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 00:41	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 00:41	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 00:41	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 00:41	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:41	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 00:41	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 00:41	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 00:41	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 00:41	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW5D-GW-092618 **Lab ID: 10449447008** Collected: 09/26/18 15:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 00:41	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 00:41	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 00:41	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 00:41	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 00:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 00:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 00:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 00:41	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 00:41	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 00:41	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 00:41	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 00:41	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 00:41	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 00:41	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 00:41	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 00:41	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 00:41	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 00:41	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 00:41	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 00:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 00:41	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 00:41	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 00:41	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 00:41	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 00:41	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 00:41	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:41	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:41	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 00:41	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 00:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 00:41	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 00:41	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 00:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 00:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 00:41	17060-07-0	
Toluene-d8 (S)	108	%.	75-125		1		10/05/18 00:41	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/05/18 00:41	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW20D-GW-092618 **Lab ID: 10449447009** Collected: 09/26/18 16:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 03:53	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:53	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 03:53	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:53	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:53	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:53	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 03:53	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 03:53	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:53	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 03:53	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:53	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:53	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:53	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:53	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:53	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:53	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:53	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 03:53	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:53	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 03:53	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 03:53	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 03:53	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 03:53	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:53	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 03:53	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 03:53	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 03:53	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:53	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 03:53	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 03:53	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 03:53	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:53	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:53	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 03:53	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 03:53	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 03:53	75-15-0	
Carbon tetrachloride	**30.7**	ug/L	2.5	0.94	5		10/05/18 14:48	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:53	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 03:53	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 03:53	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:53	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 03:53	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW20D-GW-092618 **Lab ID: 10449447009** Collected: 09/26/18 16:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:53	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 03:53	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:53	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:53	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:53	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 03:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:53	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:53	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 03:53	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 03:53	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 03:53	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:53	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 03:53	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 03:53	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 03:53	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 03:53	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 03:53	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 03:53	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 03:53	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 03:53	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:53	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 03:53	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:53	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 03:53	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:53	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:53	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:53	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 03:53	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:53	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:53	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:53	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:53	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 03:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/05/18 03:53	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		10/05/18 03:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 03:53	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: FD3-092618 **Lab ID: 10449447010** Collected: 09/26/18 18:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 01:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 01:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 01:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 01:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 01:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:05	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 01:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 01:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 01:05	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 01:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 01:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 01:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 01:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 01:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 01:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 01:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 01:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 01:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 01:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 01:05	75-15-0	
Carbon tetrachloride	**28.8**	ug/L	2.5	0.94	5		10/05/18 14:24	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 01:05	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 01:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 01:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449447

Sample: FD3-092618 **Lab ID: 10449447010** Collected: 09/26/18 18:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 01:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 01:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 01:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 01:05	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 01:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 01:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 01:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 01:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 01:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 01:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 01:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 01:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 01:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 01:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 01:05	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 01:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 01:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 01:05	17060-07-0	
Toluene-d8 (S)	108	%.	75-125		1		10/05/18 01:05	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 01:05	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW14D-GW-092618 **Lab ID: 10449447012** Collected: 09/26/18 17:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 01:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 01:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 01:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 01:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 01:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:29	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 01:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 01:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 01:29	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 01:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 01:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 01:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 01:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 01:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 01:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 01:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 01:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 01:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 01:29	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 01:29	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 01:29	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 01:29	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 01:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 01:29	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Sample: MW14D-GW-092618 **Lab ID: 10449447012** Collected: 09/26/18 17:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 01:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 01:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 01:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 01:29	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 01:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 01:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 01:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 01:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 01:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 01:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 01:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 01:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 01:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 01:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 01:29	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 01:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 01:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 01:29	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		10/05/18 01:29	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 01:29	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

QC Batch: 567038 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449447002

METHOD BLANK: 3076503 | Matrix: Water
Associated Lab Samples: 10449447002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/04/18 08:02	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/04/18 08:02	MN
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/04/18 08:02	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/04/18 08:02	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/04/18 08:02	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/04/18 08:02	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/04/18 08:02	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 08:02	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/04/18 08:02	MN
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/04/18 08:02	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/04/18 08:02	MN
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/04/18 08:02	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/04/18 08:02	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/04/18 08:02	MN
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/04/18 08:02	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/04/18 08:02	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/04/18 08:02	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/04/18 08:02	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/04/18 08:02	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/04/18 08:02	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/04/18 08:02	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 08:02	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/04/18 08:02	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/04/18 08:02	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/04/18 08:02	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/04/18 08:02	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/04/18 08:02	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/04/18 08:02	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/04/18 08:02	MN
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/04/18 08:02	
Acetone	ug/L	<9.2	20.0	9.2	10/04/18 08:02	
Acrolein	ug/L	<1.2	10.0	1.2	10/04/18 08:02	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/04/18 08:02	
Benzene	ug/L	<0.10	0.50	0.10	10/04/18 08:02	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/04/18 08:02	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/04/18 08:02	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/04/18 08:02	
Bromoform	ug/L	<0.80	4.0	0.80	10/04/18 08:02	
Bromomethane	ug/L	<1.8	4.0	1.8	10/04/18 08:02	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/04/18 08:02	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/04/18 08:02	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

METHOD BLANK: 3076503 Matrix: Water
Associated Lab Samples: 10449447002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 08:02	
Chloroethane	ug/L	<0.49	1.0	0.49	10/04/18 08:02	
Chloroform	ug/L	0.91J	1.0	0.45	10/04/18 08:02	
Chloromethane	ug/L	<0.16	4.0	0.16	10/04/18 08:02	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/04/18 08:02	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 08:02	MN
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/04/18 08:02	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	10/04/18 08:02	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/04/18 08:02	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/04/18 08:02	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/04/18 08:02	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/04/18 08:02	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/04/18 08:02	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/04/18 08:02	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/04/18 08:02	MN
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/04/18 08:02	MN
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/04/18 08:02	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/04/18 08:02	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/04/18 08:02	MN
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/04/18 08:02	MN
Naphthalene	ug/L	<0.48	1.0	0.48	10/04/18 08:02	
o-Xylene	ug/L	<0.16	1.0	0.16	10/04/18 08:02	MN
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/04/18 08:02	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 08:02	MN
Styrene	ug/L	<0.19	1.0	0.19	10/04/18 08:02	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/04/18 08:02	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/04/18 08:02	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 08:02	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/04/18 08:02	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/04/18 08:02	
Toluene	ug/L	<0.083	0.50	0.083	10/04/18 08:02	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/04/18 08:02	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/04/18 08:02	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/04/18 08:02	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/04/18 08:02	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/04/18 08:02	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/04/18 08:02	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/04/18 08:02	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/04/18 08:02	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		10/04/18 08:02	
4-Bromofluorobenzene (S)	%.	102	75-125		10/04/18 08:02	
Toluene-d8 (S)	%.	105	75-125		10/04/18 08:02	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

LABORATORY CONTROL SAMPLE: 3076504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.2	106	75-125	
1,1,1-Trichloroethane	ug/L	20	21.0	105	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	21.4	107	75-125	
1,1,2-Trichloroethane	ug/L	20	22.0	110	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.8	104	72-125	
1,1-Dichloroethane	ug/L	20	22.2	111	75-125	
1,1-Dichloroethene	ug/L	20	22.8	114	73-125	
1,1-Dichloropropene	ug/L	20	21.2	106	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-130	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.0	95	75-125	
1,2,4-Trimethylbenzene	ug/L	20	20.6	103	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	47.8	96	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	20.2	101	75-125	
1,2-Dichlorobenzene	ug/L	20	21.9	109	75-125	
1,2-Dichloroethane	ug/L	20	20.3	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	41.6	104	75-125	N2
1,2-Dichloropropane	ug/L	20	22.0	110	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.0	100	75-125	
1,3-Dichlorobenzene	ug/L	20	22.6	113	75-125	
1,3-Dichloropropane	ug/L	20	22.2	111	75-125	
1,4-Dichlorobenzene	ug/L	20	21.1	106	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	425	106	75-125	
2,2,4-Trimethylpentane	ug/L	20	18.4	92	64-130	N2
2,2-Dichloropropane	ug/L	20	17.7	89	68-129	
2-Butanone (MEK)	ug/L	100	97.1	97	65-126	
2-Chlorotoluene	ug/L	20	23.5	117	75-125	
2-Hexanone	ug/L	100	109	109	75-134	
4-Chlorotoluene	ug/L	20	20.6	103	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	75-131	
Acetone	ug/L	100	108	108	68-150	
Acrolein	ug/L	200	195	98	63-149	
Acrylonitrile	ug/L	202	211	105	75-125	
Benzene	ug/L	20	21.3	107	75-125	
Bromobenzene	ug/L	20	21.3	106	75-125	
Bromochloromethane	ug/L	20	21.3	106	75-125	
Bromodichloromethane	ug/L	20	21.3	107	75-125	
Bromoform	ug/L	20	20.8	104	70-125	
Bromomethane	ug/L	20	22.1	111	30-145	
Carbon disulfide	ug/L	20	17.5	87	67-125	
Carbon tetrachloride	ug/L	20	21.0	105	75-125	
Chlorobenzene	ug/L	20	21.2	106	75-125	
Chloroethane	ug/L	20	22.8	114	73-131	
Chloroform	ug/L	20	21.3	106	75-125	
Chloromethane	ug/L	20	23.0	115	52-132	
cis-1,2-Dichloroethene	ug/L	20	20.9	104	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	95	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

LABORATORY CONTROL SAMPLE: 3076504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	106	75-125	
Dibromomethane	ug/L	20	21.5	108	75-125	
Dichlorodifluoromethane	ug/L	20	21.6	108	64-127	
Dichlorofluoromethane	ug/L	20	22.8	114	75-125	N2
Diisopropyl ether	ug/L	20	20.3	101	75-125	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	22.0	110	75-125	
Hexachloro-1,3-butadiene	ug/L	20	22.1	110	75-130	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	40.8	102	75-125	
Methyl-tert-butyl ether	ug/L	20	21.1	106	75-125	
Methylene Chloride	ug/L	20	20.3	101	72-125	
n-Butylbenzene	ug/L	20	20.6	103	75-125	
n-Propylbenzene	ug/L	20	20.7	104	75-125	
Naphthalene	ug/L	20	18.7	94	61-136	
o-Xylene	ug/L	20	20.0	100	75-125	
p-Isopropyltoluene	ug/L	20	20.8	104	75-125	
sec-Butylbenzene	ug/L	20	20.7	104	75-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	194	97	75-125	
tert-Butylbenzene	ug/L	20	20.3	102	75-125	
Tetrachloroethene	ug/L	20	22.8	114	75-125	
Tetrahydrofuran	ug/L	200	215	108	64-150	
Toluene	ug/L	20	20.5	102	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.7	104	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.9	100	57-126	
Trichloroethene	ug/L	20	19.8	99	75-125	
Trichlorofluoromethane	ug/L	20	23.6	118	74-126	
Vinyl acetate	ug/L	20	19.8	99	72-129	
Vinyl chloride	ug/L	20	24.4	122	71-130	
Xylene (Total)	ug/L	60	60.8	101	75-125	
1,2-Dichloroethane-d4 (S)	%.			101	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3076505 3076506

Parameter	Units	10449447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.0	18.1	95	91	75-125	5	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.3	19.2	101	96	75-129	5	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.6	18.7	98	93	75-125	5	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.7	18.9	99	95	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3076505 3076506

Parameter	Units	10449447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	20.4	19.0	102	95	75-136	7	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.0	19.8	105	99	75-125	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	22.5	21.2	112	106	75-127	6	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.0	104	100	75-129	4	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.0	17.5	90	88	72-137	3	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.8	18.4	94	92	75-125	2	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	17.7	17.2	89	86	69-131	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.3	18.3	97	91	71-125	6	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.3	41.4	87	83	61-127	4	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.4	17.1	92	85	75-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.1	19.0	100	95	75-125	6	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.4	17.1	92	85	69-125	7	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	40.1	38.0	100	95	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.3	19.1	102	95	75-125	6	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.0	18.1	95	91	75-125	5	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.7	19.6	104	98	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	18.7	98	93	75-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.1	18.8	96	94	74-125	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	368	333	92	83	67-128	10	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	17.9	17.2	90	86	65-150	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	17.0	16.3	85	82	65-136	4	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	88.5	85.9	89	86	59-125	3	30	
2-Chlorotoluene	ug/L	<0.16	20	20	21.8	21.0	109	105	73-126	4	30	
2-Hexanone	ug/L	<0.88	100	100	99.6	93.6	100	94	68-138	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.2	18.5	96	93	75-125	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	92.8	86.9	93	87	73-125	7	30	
Acetone	ug/L	<9.2	100	100	94.9	93.1	95	93	75-150	2	30	
Acrolein	ug/L	<1.2	200	200	164	157	82	79	53-150	4	30	
Acrylonitrile	ug/L	<0.91	202	202	190	180	94	89	69-127	5	30	
Benzene	ug/L	<0.10	20	20	20.0	18.9	100	95	74-125	6	30	
Bromobenzene	ug/L	<0.21	20	20	19.6	18.8	98	94	75-125	4	30	
Bromochloromethane	ug/L	<0.27	20	20	19.3	18.4	97	92	75-125	5	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.3	18.0	97	90	75-125	7	30	
Bromoform	ug/L	<0.80	20	20	18.9	17.9	95	90	68-125	5	30	
Bromomethane	ug/L	<1.8	20	20	20.2	20.5	101	103	37-149	1	30	
Carbon disulfide	ug/L	<0.078	20	20	17.3	16.7	86	84	66-139	3	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.4	19.3	102	97	75-127	6	30	
Chlorobenzene	ug/L	<0.17	20	20	19.8	18.6	99	93	75-125	7	30	
Chloroethane	ug/L	<0.49	20	20	20.5	20.2	102	101	73-134	1	30	
Chloroform	ug/L	<0.45	20	20	18.5	17.6	92	88	71-125	5	30	
Chloromethane	ug/L	<0.16	20	20	20.0	19.5	100	98	58-133	3	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	19.0	99	95	75-125	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	16.4	87	82	71-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.3	18.4	97	92	75-125	5	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3076505 3076506

Parameter	Units	10449447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	18.9	17.5	95	88	75-125	8	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	20.3	19.3	102	96	70-150	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	20.4	20.3	102	102	75-126	0	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	19.0	18.1	95	90	66-131	5	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.7	17.7	94	88	74-125	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.9	19.8	104	99	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	21.0	20.5	105	103	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.6	18.5	98	93	75-125	6	30	
m&p-Xylene	ug/L	<0.31	40	40	39.3	37.0	98	93	75-125	6	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.3	18.3	97	92	75-125	5	30	
Methylene Chloride	ug/L	<0.98	20	20	17.7	16.7	89	83	72-125	6	30	
n-Butylbenzene	ug/L	<0.24	20	20	19.6	18.8	98	94	73-140	4	30	
n-Propylbenzene	ug/L	<0.10	20	20	19.5	18.7	97	93	75-126	4	30	
Naphthalene	ug/L	<0.48	20	20	17.6	16.7	88	83	61-136	5	30	
o-Xylene	ug/L	<0.16	20	20	19.0	18.3	95	92	75-125	4	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.4	18.7	97	94	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	20.2	19.3	101	97	75-132	4	30	
Styrene	ug/L	<0.19	20	20	16.4	15.7	82	79	71-125	4	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.1	17.2	91	86	71-125	5	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	181	171	91	85	72-130	6	30	
tert-Butylbenzene	ug/L	<0.15	20	20	19.8	18.8	99	94	75-126	5	30	
Tetrachloroethene	ug/L	<0.17	20	20	22.1	21.3	111	106	75-125	4	30	
Tetrahydrofuran	ug/L	<2.2	200	200	182	179	91	90	75-150	2	30	
Toluene	ug/L	<0.083	20	20	19.6	18.3	98	91	74-125	7	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.2	19.0	101	95	75-125	6	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.7	17.5	93	87	70-125	6	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	44.4	42.4	89	85	57-125	4	30	
Trichloroethene	ug/L	<0.15	20	20	18.8	17.8	94	89	75-125	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	21.7	20.9	108	105	75-135	4	30	
Vinyl acetate	ug/L	<1.1	20	20	13.6	13.4	68	67	57-136	2	30	
Vinyl chloride	ug/L	<0.092	20	20	23.3	22.2	116	111	74-141	5	30	
Xylene (Total)	ug/L	<0.31	60	60	58.3	55.3	97	92	75-125	5	30	
1,2-Dichloroethane-d4 (S)	%.						101	100	75-125			
4-Bromofluorobenzene (S)	%.						101	101	75-125			
Toluene-d8 (S)	%.						102	102	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

QC Batch: 567352 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449447001, 10449447003, 10449447004, 10449447005, 10449447006, 10449447007, 10449447008, 10449447009, 10449447010, 10449447012

METHOD BLANK: 3078682 Matrix: Water
Associated Lab Samples: 10449447001, 10449447003, 10449447004, 10449447005, 10449447006, 10449447007, 10449447008, 10449447009, 10449447010, 10449447012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/04/18 21:04	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/04/18 21:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/04/18 21:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/04/18 21:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/04/18 21:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/04/18 21:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/04/18 21:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/04/18 21:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/04/18 21:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/04/18 21:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/04/18 21:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/04/18 21:04	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/04/18 21:04	
Acetone	ug/L	<9.2	20.0	9.2	10/04/18 21:04	
Acrolein	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/04/18 21:04	
Benzene	ug/L	<0.10	0.50	0.10	10/04/18 21:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/04/18 21:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/04/18 21:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
Bromoform	ug/L	<0.80	4.0	0.80	10/04/18 21:04	
Bromomethane	ug/L	<1.8	4.0	1.8	10/04/18 21:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/04/18 21:04	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

METHOD BLANK: 3078682 Matrix: Water

Associated Lab Samples: 10449447001, 10449447003, 10449447004, 10449447005, 10449447006, 10449447007, 10449447008, 10449447009, 10449447010, 10449447012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/04/18 21:04	
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Chloroethane	ug/L	<0.49	1.0	0.49	10/04/18 21:04	
Chloroform	ug/L	<0.45	1.0	0.45	10/04/18 21:04	
Chloromethane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/04/18 21:04	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/04/18 21:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/04/18 21:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/04/18 21:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/04/18 21:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/04/18 21:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/04/18 21:04	
Naphthalene	ug/L	<0.48	1.0	0.48	10/04/18 21:04	
o-Xylene	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Styrene	ug/L	<0.19	1.0	0.19	10/04/18 21:04	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/04/18 21:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/04/18 21:04	
Toluene	ug/L	<0.083	0.50	0.083	10/04/18 21:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/04/18 21:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/04/18 21:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/04/18 21:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/04/18 21:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/04/18 21:04	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/04/18 21:04	
1,2-Dichloroethane-d4 (S)	%.	100	75-125		10/04/18 21:04	
4-Bromofluorobenzene (S)	%.	100	75-125		10/04/18 21:04	
Toluene-d8 (S)	%.	104	75-125		10/04/18 21:04	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,1-Trichloroethane	ug/L	10	9.3	93	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.6	96	72-125	
1,1-Dichloroethane	ug/L	10	9.7	97	75-125	
1,1-Dichloroethene	ug/L	10	9.6	96	73-125	
1,1-Dichloropropene	ug/L	10	9.5	95	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.0	90	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.6	86	75-125	
1,2,4-Trimethylbenzene	ug/L	10	9.0	90	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	22.4	90	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.8	88	75-125	
1,2-Dichlorobenzene	ug/L	10	9.5	95	75-125	
1,2-Dichloroethane	ug/L	10	9.1	91	75-125	
1,2-Dichloroethene (Total)	ug/L	20	18.4	92	75-125	N2
1,2-Dichloropropane	ug/L	10	9.9	99	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.7	87	75-125	
1,3-Dichlorobenzene	ug/L	10	10	100	75-125	
1,3-Dichloropropane	ug/L	10	9.4	94	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	176J	88	75-125	
2,2,4-Trimethylpentane	ug/L	10	9.4	94	64-130	N2
2,2-Dichloropropane	ug/L	10	9.7	97	68-129	
2-Butanone (MEK)	ug/L	50	47.6	95	65-126	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
2-Hexanone	ug/L	50	46.0	92	75-134	
4-Chlorotoluene	ug/L	10	9.4	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	48.3	97	68-150	
Acrolein	ug/L	100	85.1	85	63-149	
Acrylonitrile	ug/L	101	93.7	93	75-125	
Benzene	ug/L	10	9.2	92	75-125	
Bromobenzene	ug/L	10	9.6	96	75-125	
Bromochloromethane	ug/L	10	9.3	93	75-125	
Bromodichloromethane	ug/L	10	9.2	92	75-125	
Bromoform	ug/L	10	9.7	97	70-125	
Bromomethane	ug/L	10	9.9	99	30-145	
Carbon disulfide	ug/L	10	7.1	71	67-125	
Carbon tetrachloride	ug/L	10	10.4	104	75-125	
Chlorobenzene	ug/L	10	9.5	95	75-125	
Chloroethane	ug/L	10	10.6	106	73-131	
Chloroform	ug/L	10	8.6	86	75-125	
Chloromethane	ug/L	10	10.5	105	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.8	88	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	9.7	97	75-125	
Dibromomethane	ug/L	10	9.4	94	75-125	
Dichlorodifluoromethane	ug/L	10	10	100	64-127	
Dichlorofluoromethane	ug/L	10	10.0	100	75-125	N2
Diisopropyl ether	ug/L	10	8.7	87	75-125	
Ethyl-tert-butyl ether	ug/L	10	8.9	89	75-125	
Ethylbenzene	ug/L	10	9.5	95	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.5	105	75-130	
Isopropylbenzene (Cumene)	ug/L	10	9.0	90	75-125	
m&p-Xylene	ug/L	20	18.1	91	75-125	
Methyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Methylene Chloride	ug/L	10	8.5	85	72-125	
n-Butylbenzene	ug/L	10	9.0	90	75-125	
n-Propylbenzene	ug/L	10	9.0	90	75-125	
Naphthalene	ug/L	10	8.2	82	61-136	
o-Xylene	ug/L	10	9.0	90	75-125	
p-Isopropyltoluene	ug/L	10	9.5	95	75-125	
sec-Butylbenzene	ug/L	10	9.3	93	75-125	
Styrene	ug/L	10	8.6	86	75-125	
tert-Amylmethyl ether	ug/L	10	8.8	88	75-125	
tert-Butyl Alcohol	ug/L	100	92.7	93	75-125	
tert-Butylbenzene	ug/L	10	9.0	90	75-125	
Tetrachloroethene	ug/L	10	10.3	103	75-125	
Tetrahydrofuran	ug/L	100	91.6	92	64-150	
Toluene	ug/L	10	8.5	85	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.1	91	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.2	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	21.9	87	57-126	
Trichloroethene	ug/L	10	9.9	99	75-125	
Trichlorofluoromethane	ug/L	10	10.5	105	74-126	
Vinyl acetate	ug/L	10	8.4J	84	72-129	
Vinyl chloride	ug/L	10	10.6	106	71-130	
Xylene (Total)	ug/L	30	27.2	91	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.2	19.4	101	97	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.2	20.5	106	102	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.2	18.8	96	94	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.0	20.0	100	100	75-125	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.4	20.1	107	101	75-136	6	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.9	20.9	110	105	75-125	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	23.2	22.2	116	111	75-127	4	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.9	20.5	104	103	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.2	18.9	96	94	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.3	18.4	91	92	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	19.2	18.9	96	95	69-131	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.8	19.4	99	97	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	44.0	45.4	88	91	61-127	3	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.3	17.8	91	89	75-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	20.2	101	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.6	18.0	93	90	69-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.1	40.5	105	101	75-125	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.1	20.7	105	103	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.9	19.5	100	98	75-125	2	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.5	20.9	107	104	75-125	3	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.8	19.7	99	99	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.2	20.1	101	100	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	375	348	94	87	67-128	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.0	19.3	100	96	65-150	3	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.0	21.5	110	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.3	89.2	84	89	59-125	6	30	
2-Chlorotoluene	ug/L	<0.16	20	20	23.2	22.3	116	111	73-126	4	30	
2-Hexanone	ug/L	<0.88	100	100	91.4	94.5	91	95	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.9	19.5	100	97	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.5	89.9	87	90	73-125	3	30	
Acetone	ug/L	<9.2	100	100	99.6	93.1	100	93	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	176	176	88	88	53-150	0	30	
Acrylonitrile	ug/L	<0.91	202	202	183	185	90	92	69-127	1	30	
Benzene	ug/L	<0.10	20	20	20.8	19.9	104	100	74-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	20.6	20.2	103	101	75-125	2	30	
Bromochloromethane	ug/L	<0.27	20	20	20.0	19.3	100	96	75-125	4	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.3	19.7	101	98	75-125	3	30	
Bromoform	ug/L	<0.80	20	20	19.6	18.7	98	94	68-125	5	30	
Bromomethane	ug/L	<1.8	20	20	17.9	20.8	90	104	37-149	15	30	
Carbon disulfide	ug/L	<0.078	20	20	17.5	16.8	88	84	66-139	4	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.7	20.3	104	102	75-127	2	30	
Chlorobenzene	ug/L	<0.17	20	20	20.4	19.9	102	100	75-125	2	30	
Chloroethane	ug/L	<0.49	20	20	19.4	22.3	97	112	73-134	14	30	
Chloroform	ug/L	<0.45	20	20	19.3	18.8	96	94	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	18.8	22.2	94	111	58-133	17	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.9	20.2	104	101	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	18.3	17.8	92	89	71-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	20.1	19.6	100	98	75-125	3	30	

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	19.3	18.9	96	95	75-125	2	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.2	20.9	91	105	70-150	14	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	18.1	21.0	90	105	75-126	15	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.6	18.8	93	94	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.1	18.3	90	92	74-125	1	30	
Ethylbenzene	ug/L	<0.14	20	20	22.1	21.1	110	106	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.7	22.8	118	114	60-150	4	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.8	20.3	104	101	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	41.3	39.8	103	100	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.8	18.8	94	94	75-125	0	30	
Methylene Chloride	ug/L	<0.98	20	20	18.2	17.8	90	88	72-125	2	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.4	20.8	107	104	73-140	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.7	19.9	103	99	75-126	4	30	
Naphthalene	ug/L	<0.48	20	20	17.3	17.7	87	89	61-136	2	30	
o-Xylene	ug/L	<0.16	20	20	19.9	19.2	100	96	75-125	4	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.2	20.5	106	103	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.4	20.5	107	102	75-132	5	30	
Styrene	ug/L	<0.19	20	20	19.3	18.7	97	94	71-125	3	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	17.8	87	89	71-125	3	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	200	199	100	100	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.7	19.9	103	100	75-126	4	30	
Tetrachloroethene	ug/L	<0.17	20	20	23.3	22.6	116	113	75-125	3	30	
Tetrahydrofuran	ug/L	<2.2	200	200	194	186	97	93	75-150	4	30	
Toluene	ug/L	<0.083	20	20	19.4	19.3	97	96	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.2	20.2	106	101	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.1	18.9	96	94	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	46.1	45.4	92	91	57-125	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.7	19.2	98	96	75-125	2	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.2	22.0	96	110	75-135	13	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.0	89	90	57-136	1	30	
Vinyl chloride	ug/L	<0.092	20	20	20.0	23.1	100	115	74-141	15	30	
Xylene (Total)	ug/L	<0.31	60	60	61.3	59.0	102	98	75-125	4	30	
1,2-Dichloroethane-d4 (S)	%.						98	99	75-125			HS
4-Bromofluorobenzene (S)	%.						101	100	75-125			
Toluene-d8 (S)	%.						97	96	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449447

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

Pace Analytical Services, LLC
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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449447

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449447001	**MW21D-GW-092618**	EPA 8260B	567352		
10449447002	**MW16D-GW-092618**	EPA 8260B	567038		
10449447003	**MW18D-GW-092618**	EPA 8260B	567352		
10449447004	**MW15D-GW-092618**	EPA 8260B	567352		
10449447005	**MW4D-GW-092618**	EPA 8260B	567352		
10449447006	**MW17D-GW-092618**	EPA 8260B	567352		
10449447007	**MW19D-GW-092618**	EPA 8260B	567352		
10449447008	**MW5D-GW-092618**	EPA 8260B	567352		
10449447009	**MW20D-GW-092618**	EPA 8260B	567352		
10449447010	**FD3-092618**	EPA 8260B	567352		
10449447012	**MW14D-GW-092618**	EPA 8260B	567352		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR	
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	State / Location
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*	WA / Freeman

WO# : 10449447

10449447

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 208	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK	COD 410.4	Nitrate+Nitrite 353.2		MS/MSD Requested		
1	MW21D-GW-092618	WT	G	9/26	900	—	—	—	9				X				X											X		001
2	MW16D-GW-092618				1015	—	—	—	9				X				X											X		002
3	MW18D-GW-092618				1100	—	—	—	3				X				X													003
4	MW15D-GW-092618				1200	—	—	—	3				X				X													004
5	MW4D-GW-092618				1245	—	—	—	3				X				X													005
6	MW17D-GW-092618				1415	—	—	—	3				X				X													006
7	MW19D-GW-092618				1500	—	—	—	3				X				X													007
8	MW5D-GW-092618				1545	—	—	—	3				X				X													008
9	MW20D-GW-092618				1645	—	—	—	3				X				X													009
10	F03-092618				1800	—	—	—	3				X				X													010
11	TB-092618	WT	G	9/26	700	—	—	—	2				X				X													011
12	MW14D-GW-092618	WT	G	9/26	1745	—	—	—	3				X				X													012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/27/18	1500	[signature] Pace	9/28/18	1000	5.8 2.7 0.8 3.2	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/26/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI** Document No.: **F-MN-L-210-rev.25**	Document Revised: 02May2018 Page 1 of 2 Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M HILL - UPRR

Project #:

WO# : 10449447
PM: JMG Due Date: 10/05/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9641 4748/4770/4760/4759

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☒Other: PB

Temp Blank? ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 5.6, 2.5, 0.6, 3.0 **Cooler Temp Corrected (°C):** 5.8, 2.7, 0.8, 3.2

Temp should be above freezing to 6°C **Correction Factor:** +0.2

Biological Tissue Frozen? ☐Yes ☐No ☒NA

USDA Regulated Soil (☒N/A, water sample)

Date and Initials of Person Examining Contents: EPT 9/28/18

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8. NO VOLUME PROVIDED FOR "TR-092618"
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	~~☒Yes~~	☒No		12. VG9H CONTAINERS FOR "MWSD-GW-092618" LABELED AS "MW2GD-GW-092618" W/ MATCHING DATE + TIME → SEE EXCEPTIONS
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒Yes	☐No	☐N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒Yes	☐No	☐N/A	14. SEE EXCEPTIONS
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased): N/A				

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark **Field Data Required?** ☐Yes ☐No

Date/Time: 06/27/18

Comments/Resolution: WA certs not required for ~~2,2,4-TMP~~ or dichlorofluoromethane.
10/01/18 Brad- notified of headspace.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time:	Temp:	Corrected Temp:
Time:	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 10/01/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: KV

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 2 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

SCUR Exceptions: **Workorder #:**

Issue	Sample ID	Container Type/#
MISSING SAMPLE	TB-092618	VG9H 2/2
SAMPLE LABEL DOES NOT MATCH SAMPLE ID ON COC. CONTAINERS	MW5D-GW-092618	VG9H 3/3
IDENTIFIED BY THE OTHERS THAT THEY WERE PACKAGED W/ UPON	"	"
ARRIVAL. SAMPLES WERE SENT IN BAGS SEPARATING EACH OF THEM	"	"
FOR THIS PROJECT.	"	"

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH Upon Receipt	Date Preservation Adjusted	Time Preservation Adjusted	Amount of Additional Preservative Added	Lot # of Preservative Added	pH After Adjustment	Initials

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
MW21D-GW-092618	8	1	0	9
MW16D-GW-092618	1	8	0	9
MW18D-GW-092618	3	0	0	3
MW15D-GW-092618	0	2	1	3
MW4D-GW-092618	2	1	0	3
MW17D-GW-092618	0	3	0	3
MW19D-GW-092618	0	1	~~0~~ 2 GPT 9/28/18	3
MW5D-GW-092618 (LABELED AS "MW26D-GW-092618")	0	3	0	3
MW20D-GW-092618	0	0	3	3
FD3-092618	0	2	1	3

Pace Analytical Services, LLC
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October 11, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, Jacobs
Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Montana Certificate #CERT0103
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449490001	**MW3D-GW-092718**	Water	09/27/18 09:15	09/28/18 10:00
10449490002	**MW9D-GW-092718**	Water	09/27/18 10:00	09/28/18 10:00
10449490003	**MW9U-GW-092718**	Water	09/27/18 10:45	09/28/18 10:00
10449490004	**MW2D-GW-092718**	Water	09/27/18 11:45	09/28/18 10:00
10449490005	**MW1D-GW-092718**	Water	09/27/18 12:45	09/28/18 10:00
10449490006	**FD4-092718**	Water	09/27/18 07:00	09/28/18 10:00
10449490007	**FD5-092718**	Water	09/27/18 07:30	09/28/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449490001	**MW3D-GW-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490002	**MW9D-GW-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490003	**MW9U-GW-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490004	**MW2D-GW-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490005	**MW1D-GW-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490006	**FD4-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10449490007	**FD5-092718**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	NAS	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449490001	**MW3D-GW-092718**					
EPA 6010D	Barium, Dissolved	39.7	ug/L	10.0	10/04/18 14:32	
EPA 6010D	Beryllium, Dissolved	0.15J	ug/L	5.0	10/04/18 14:32	
EPA 6010D	Cadmium, Dissolved	0.26J	ug/L	3.0	10/04/18 14:32	
EPA 6010D	Calcium, Dissolved	29700	ug/L	500	10/04/18 14:32	
EPA 6010D	Iron, Dissolved	10.8J	ug/L	50.0	10/04/18 14:32	B
EPA 6010D	Magnesium, Dissolved	8950	ug/L	500	10/04/18 14:32	
EPA 6010D	Manganese, Dissolved	6.7	ug/L	5.0	10/04/18 14:32	
EPA 6010D	Potassium, Dissolved	980J	ug/L	2500	10/04/18 14:32	
EPA 6010D	Sodium, Dissolved	11600	ug/L	1000	10/04/18 14:32	
EPA 6010D	Vanadium, Dissolved	1.9J	ug/L	15.0	10/04/18 14:32	B
SM 2320B	Alkalinity, Total as CaCO3	143	mg/L	5.0	10/10/18 08:59	
SM 2540C	Total Dissolved Solids	200	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	1.3	mg/L	1.2	09/28/18 20:15	
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	09/28/18 20:15	
EPA 300.0	Sulfate	2.9	mg/L	1.2	09/28/18 20:15	
EPA 353.2	Nitrogen, NO2 plus NO3	0.14	mg/L	0.10	10/05/18 10:40	
EPA 410.4	Chemical Oxygen Demand	30.4J	mg/L	50.0	10/09/18 17:48	B
SM 5310C	Total Organic Carbon	1.7	mg/L	1.0	10/02/18 02:59	B
10449490002	**MW9D-GW-092718**					
EPA 6010D	Barium, Dissolved	27.4	ug/L	10.0	10/04/18 14:40	
EPA 6010D	Cadmium, Dissolved	0.40J	ug/L	3.0	10/04/18 14:40	
EPA 6010D	Calcium, Dissolved	50700	ug/L	500	10/04/18 14:40	
EPA 6010D	Iron, Dissolved	7.7J	ug/L	50.0	10/04/18 14:40	B
EPA 6010D	Magnesium, Dissolved	14700	ug/L	500	10/04/18 14:40	
EPA 6010D	Manganese, Dissolved	1.3J	ug/L	5.0	10/04/18 14:40	
EPA 6010D	Potassium, Dissolved	2140J	ug/L	2500	10/04/18 14:40	
EPA 6010D	Sodium, Dissolved	15300	ug/L	1000	10/04/18 14:40	
EPA 6010D	Vanadium, Dissolved	7.8J	ug/L	15.0	10/04/18 14:40	
SM 2320B	Alkalinity, Total as CaCO3	173	mg/L	5.0	10/10/18 09:04	
SM 2540C	Total Dissolved Solids	307	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	12.1	mg/L	1.2	09/28/18 21:00	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	09/28/18 21:00	
EPA 300.0	Sulfate	35.5	mg/L	1.2	09/28/18 21:00	
EPA 353.2	Nitrogen, NO2 plus NO3	3.5	mg/L	0.50	10/05/18 11:11	
EPA 410.4	Chemical Oxygen Demand	30.0J	mg/L	50.0	10/09/18 17:48	B
SM 5310C	Total Organic Carbon	1.0J	mg/L	2.0	10/02/18 18:37	
10449490003	**MW9U-GW-092718**					
EPA 6010D	Barium, Dissolved	20.0	ug/L	10.0	10/04/18 14:41	
EPA 6010D	Cadmium, Dissolved	0.27J	ug/L	3.0	10/04/18 14:41	
EPA 6010D	Calcium, Dissolved	51000	ug/L	500	10/04/18 14:41	
EPA 6010D	Cobalt, Dissolved	0.66J	ug/L	10.0	10/04/18 14:41	
EPA 6010D	Iron, Dissolved	12.2J	ug/L	50.0	10/04/18 14:41	B
EPA 6010D	Magnesium, Dissolved	14100	ug/L	500	10/04/18 14:41	
EPA 6010D	Manganese, Dissolved	1.4J	ug/L	5.0	10/04/18 14:41	
EPA 6010D	Nickel, Dissolved	3.0J	ug/L	20.0	10/04/18 14:41	
EPA 6010D	Potassium, Dissolved	1770J	ug/L	2500	10/04/18 14:41	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449490003	**MW9U-GW-092718**					
EPA 6010D	Sodium, Dissolved	13300	ug/L	1000	10/04/18 14:41	
EPA 6010D	Vanadium, Dissolved	7.2J	ug/L	15.0	10/04/18 14:41	
EPA 6010D	Zinc, Dissolved	5.0J	ug/L	20.0	10/04/18 14:41	
SM 2320B	Alkalinity, Total as CaCO3	161	mg/L	5.0	10/10/18 09:07	
SM 2540C	Total Dissolved Solids	137	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	11.3	mg/L	1.2	09/28/18 21:15	
EPA 300.0	Nitrate as N	5.7	mg/L	0.10	09/28/18 21:15	
EPA 300.0	Sulfate	33.9	mg/L	1.2	09/28/18 21:15	
EPA 353.2	Nitrogen, NO2 plus NO3	5.4	mg/L	0.50	10/05/18 11:16	
SM 5310C	Total Organic Carbon	0.78J	mg/L	2.0	10/02/18 18:50	B
10449490004	**MW2D-GW-092718**					
RSK 175	Methane	40.3	ug/L	10.0	10/02/18 11:36	
EPA 6010D	Barium, Dissolved	91.9	ug/L	10.0	10/04/18 14:43	
EPA 6010D	Calcium, Dissolved	37500	ug/L	500	10/04/18 14:43	
EPA 6010D	Chromium, Dissolved	0.87J	ug/L	10.0	10/04/18 14:43	
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	10/04/18 14:43	
EPA 6010D	Iron, Dissolved	2120	ug/L	50.0	10/04/18 14:43	
EPA 6010D	Magnesium, Dissolved	10300	ug/L	500	10/04/18 14:43	
EPA 6010D	Manganese, Dissolved	1020	ug/L	5.0	10/04/18 14:43	
EPA 6010D	Potassium, Dissolved	2910	ug/L	2500	10/04/18 14:43	
EPA 6010D	Sodium, Dissolved	15300	ug/L	1000	10/04/18 14:43	
EPA 6010D	Vanadium, Dissolved	0.66J	ug/L	15.0	10/04/18 14:43	B
EPA 6010D	Zinc, Dissolved	4.1J	ug/L	20.0	10/04/18 14:43	
SM 2320B	Alkalinity, Total as CaCO3	180	mg/L	5.0	10/10/18 09:11	
SM 2540C	Total Dissolved Solids	217	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	1.6	mg/L	1.2	09/28/18 21:31	
EPA 300.0	Nitrate as N	0.052J	mg/L	0.10	09/28/18 21:31	
EPA 300.0	Sulfate	1.7	mg/L	1.2	09/28/18 21:31	
EPA 353.2	Nitrogen, NO2 plus NO3	0.023J	mg/L	0.10	10/05/18 10:51	
SM 5310C	Total Organic Carbon	2.9	mg/L	1.0	10/02/18 04:10	
10449490005	**MW1D-GW-092718**					
EPA 6010D	Barium, Dissolved	72.0	ug/L	10.0	10/04/18 14:45	
EPA 6010D	Cadmium, Dissolved	0.30J	ug/L	3.0	10/04/18 14:45	
EPA 6010D	Calcium, Dissolved	49400	ug/L	500	10/04/18 14:45	
EPA 6010D	Cobalt, Dissolved	1.0J	ug/L	10.0	10/04/18 14:45	
EPA 6010D	Iron, Dissolved	10.4J	ug/L	50.0	10/04/18 14:45	B
EPA 6010D	Magnesium, Dissolved	12300	ug/L	500	10/04/18 14:45	
EPA 6010D	Manganese, Dissolved	48.9	ug/L	5.0	10/04/18 14:45	
EPA 6010D	Potassium, Dissolved	1090J	ug/L	2500	10/04/18 14:45	
EPA 6010D	Sodium, Dissolved	10800	ug/L	1000	10/04/18 14:45	
EPA 6010D	Vanadium, Dissolved	1.7J	ug/L	15.0	10/04/18 14:45	B
EPA 6010D	Zinc, Dissolved	5.2J	ug/L	20.0	10/04/18 14:45	
SM 2320B	Alkalinity, Total as CaCO3	191	mg/L	5.0	10/10/18 09:15	
SM 2540C	Total Dissolved Solids	206	mg/L	10.0	10/03/18 14:29	
EPA 300.0	Chloride	1.8	mg/L	1.2	09/28/18 21:46	
EPA 300.0	Nitrate as N	0.12	mg/L	0.10	09/28/18 21:46	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449490

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449490005	**MW1D-GW-092718**					
EPA 300.0	Sulfate	5.3	mg/L	1.2	09/28/18 21:46	
EPA 353.2	Nitrogen, NO2 plus NO3	0.12	mg/L	0.10	10/05/18 10:52	
EPA 410.4	Chemical Oxygen Demand	17.3J	mg/L	50.0	10/11/18 15:55	
SM 5310C	Total Organic Carbon	0.86J	mg/L	1.0	10/02/18 04:24	B
10449490006	**FD4-092718**					
EPA 6010D	Aluminum, Dissolved	30.7J	ug/L	200	10/04/18 14:46	B
EPA 6010D	Barium, Dissolved	28.6	ug/L	10.0	10/04/18 14:46	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	10/04/18 14:46	
EPA 6010D	Calcium, Dissolved	52600	ug/L	500	10/04/18 14:46	
EPA 6010D	Iron, Dissolved	9.8J	ug/L	50.0	10/04/18 14:46	B
EPA 6010D	Magnesium, Dissolved	15300	ug/L	500	10/04/18 14:46	
EPA 6010D	Manganese, Dissolved	1.3J	ug/L	5.0	10/04/18 14:46	
EPA 6010D	Potassium, Dissolved	2260J	ug/L	2500	10/04/18 14:46	
EPA 6010D	Sodium, Dissolved	16100	ug/L	1000	10/04/18 14:46	
EPA 6010D	Vanadium, Dissolved	7.9J	ug/L	15.0	10/04/18 14:46	
EPA 6010D	Zinc, Dissolved	2.9J	ug/L	20.0	10/04/18 14:46	
SM 2320B	Alkalinity, Total as CaCO3	170	mg/L	5.0	10/10/18 09:20	
SM 2540C	Total Dissolved Solids	314	mg/L	10.0	10/04/18 10:59	
EPA 300.0	Chloride	12.1	mg/L	1.2	09/28/18 22:01	
EPA 300.0	Nitrate as N	3.9	mg/L	0.10	09/28/18 22:01	
EPA 300.0	Sulfate	35.3	mg/L	1.2	09/28/18 22:01	
EPA 353.2	Nitrogen, NO2 plus NO3	3.7	mg/L	0.50	10/05/18 11:17	
EPA 410.4	Chemical Oxygen Demand	17.6J	mg/L	50.0	10/11/18 15:56	
SM 5310C	Total Organic Carbon	2.5	mg/L	1.0	10/02/18 04:38	
10449490007	**FD5-092718**					
EPA 6010D	Barium, Dissolved	19.3	ug/L	10.0	10/04/18 14:48	
EPA 6010D	Calcium, Dissolved	49800	ug/L	500	10/04/18 14:48	
EPA 6010D	Iron, Dissolved	9.9J	ug/L	50.0	10/04/18 14:48	B
EPA 6010D	Magnesium, Dissolved	13800	ug/L	500	10/04/18 14:48	
EPA 6010D	Manganese, Dissolved	1.2J	ug/L	5.0	10/04/18 14:48	
EPA 6010D	Nickel, Dissolved	3.4J	ug/L	20.0	10/04/18 14:48	
EPA 6010D	Potassium, Dissolved	1720J	ug/L	2500	10/04/18 14:48	
EPA 6010D	Sodium, Dissolved	12900	ug/L	1000	10/04/18 14:48	
EPA 6010D	Vanadium, Dissolved	7.0J	ug/L	15.0	10/04/18 14:48	
EPA 6010D	Zinc, Dissolved	2.8J	ug/L	20.0	10/04/18 14:48	
SM 2320B	Alkalinity, Total as CaCO3	159	mg/L	5.0	10/10/18 09:24	
SM 2540C	Total Dissolved Solids	313	mg/L	10.0	10/04/18 10:59	
EPA 300.0	Chloride	11.4	mg/L	1.2	09/28/18 22:16	
EPA 300.0	Nitrate as N	5.8	mg/L	0.10	09/28/18 22:16	
EPA 300.0	Sulfate	34.4	mg/L	1.2	09/28/18 22:16	
EPA 353.2	Nitrogen, NO2 plus NO3	3.7	mg/L	0.50	10/05/18 11:19	
SM 5310C	Total Organic Carbon	2.3	mg/L	1.0	10/02/18 04:52	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 566474

R1: RPD value was outside control limits.

- DUP (Lab ID: 3073652)
  - Methane
- DUP (Lab ID: 3073653)
  - Ethane
  - Ethene
  - Methane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 566278

B: Analyte was detected in the associated method blank.
- BLANK for HBN 566278 [MPRP/867 (Lab ID: 3072929)
  - Aluminum, Dissolved
  - Iron, Dissolved
  - Vanadium, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449490

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568265

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10450292002,10450292003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3083867)
  - Alkalinity, Total as CaCO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 566834

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3075548)
  - Total Dissolved Solids

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 121973

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 525903)
  - Sulfide, Total

QC Batch: 122220

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2085191001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 527084)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 566009

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449442002,10449444002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3071265)
  - Nitrate as N
  - Sulfate
- MS (Lab ID: 3071267)
  - Nitrate as N
- MSD (Lab ID: 3071266)
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 3071268)
  - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567424

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3079207)
  - Nitrogen, NO2 plus NO3
- MS (Lab ID: 3079209)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079208)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3079210)
  - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 568045

B: Analyte was detected in the associated method blank.
- BLANK for HBN 568045 [WETA/370 (Lab ID: 3082624)
  - Chemical Oxygen Demand

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 568045

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10449442001,10449442002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3082628)
  - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: October 11, 2018

General Information:
7 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 153378

B: Analyte was detected in the associated method blank.
- BLANK for HBN 153378 [WETA/251 (Lab ID: 606762)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW3D-GW-092718 **Lab ID: 10449490001** Collected: 09/27/18 09:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 10:28	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 10:28	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 10:28	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:32	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:32	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:32	7440-38-2	
Barium, Dissolved	**39.7**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:32	7440-39-3	
Beryllium, Dissolved	**0.15J**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:32	7440-41-7	
Cadmium, Dissolved	**0.26J**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:32	7440-43-9	
Calcium, Dissolved	**29700**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:32	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:32	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:32	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:32	7440-50-8	
Iron, Dissolved	**10.8J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:32	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:32	7439-92-1	
Magnesium, Dissolved	**8950**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:32	7439-95-4	
Manganese, Dissolved	**6.7**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:32	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:32	7440-02-0	
Potassium, Dissolved	**980J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:32	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:32	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:32	7440-22-4	
Sodium, Dissolved	**11600**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:32	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:32	7440-28-0	
Vanadium, Dissolved	**1.9J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:32	7440-62-2	B
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:32	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:05	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**143**	mg/L	5.0	1.0	1		10/10/18 08:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**200**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:23	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.3**	mg/L	1.2	0.28	1		09/28/18 20:15	16887-00-6	
Nitrate as N	**0.14**	mg/L	0.10	0.015	1		09/28/18 20:15	14797-55-8	
Sulfate	**2.9**	mg/L	1.2	0.19	1		09/28/18 20:15	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW3D-GW-092718 **Lab ID: 10449490001** Collected: 09/27/18 09:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.14**	mg/L	0.10	0.018	1		10/05/18 10:40		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**30.4J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:48		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.20	1		10/02/18 02:59	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449490

Sample: MW9D-GW-092718 **Lab ID: 10449490002** Collected: 09/27/18 10:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 10:35	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 10:35	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 10:35	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:40	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:40	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:40	7440-38-2	
Barium, Dissolved	**27.4**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:40	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:40	7440-41-7	
Cadmium, Dissolved	**0.40J**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:40	7440-43-9	
Calcium, Dissolved	**50700**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:40	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:40	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:40	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:40	7440-50-8	
Iron, Dissolved	**7.7J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:40	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:40	7439-92-1	
Magnesium, Dissolved	**14700**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:40	7439-95-4	
Manganese, Dissolved	**1.3J**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:40	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:40	7440-02-0	
Potassium, Dissolved	**2140J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:40	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:40	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:40	7440-22-4	
Sodium, Dissolved	**15300**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:40	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:40	7440-28-0	
Vanadium, Dissolved	**7.8J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:40	7440-62-2	
Zinc, Dissolved	**<2.5**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:40	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:07	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**173**	mg/L	5.0	1.0	1		10/10/18 09:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**307**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:25	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**12.1**	mg/L	1.2	0.28	1		09/28/18 21:00	16887-00-6	
Nitrate as N	**3.8**	mg/L	0.10	0.015	1		09/28/18 21:00	14797-55-8	
Sulfate	**35.5**	mg/L	1.2	0.19	1		09/28/18 21:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW9D-GW-092718 **Lab ID: 10449490002** Collected: 09/27/18 10:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.5**	mg/L	0.50	0.088	5		10/05/18 11:11		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**30.0J**	mg/L	50.0	17.0	1	10/09/18 11:41	10/09/18 17:48		B
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0J**	mg/L	2.0	0.40	2		10/02/18 18:37	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW9U-GW-092718 **Lab ID: 10449490003** Collected: 09/27/18 10:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 11:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 11:29	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 11:29	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:41	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:41	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:41	7440-38-2	
Barium, Dissolved	**20.0**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:41	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:41	7440-41-7	
Cadmium, Dissolved	**0.27J**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:41	7440-43-9	
Calcium, Dissolved	**51000**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:41	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:41	7440-47-3	
Cobalt, Dissolved	**0.66J**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:41	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:41	7440-50-8	
Iron, Dissolved	**12.2J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:41	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:41	7439-92-1	
Magnesium, Dissolved	**14100**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:41	7439-95-4	
Manganese, Dissolved	**1.4J**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:41	7439-96-5	
Nickel, Dissolved	**3.0J**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:41	7440-02-0	
Potassium, Dissolved	**1770J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:41	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:41	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:41	7440-22-4	
Sodium, Dissolved	**13300**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:41	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:41	7440-28-0	
Vanadium, Dissolved	**7.2J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:41	7440-62-2	
Zinc, Dissolved	**5.0J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:41	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:14	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**161**	mg/L	5.0	1.0	1		10/10/18 09:07		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**137**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:26	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.3**	mg/L	1.2	0.28	1		09/28/18 21:15	16887-00-6	
Nitrate as N	**5.7**	mg/L	0.10	0.015	1		09/28/18 21:15	14797-55-8	
Sulfate	**33.9**	mg/L	1.2	0.19	1		09/28/18 21:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW9U-GW-092718 **Lab ID: 10449490003** Collected: 09/27/18 10:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**5.4**	mg/L	0.50	0.088	5		10/05/18 11:16		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:55		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.78J**	mg/L	2.0	0.40	2		10/02/18 18:50	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW2D-GW-092718 **Lab ID: 10449490004** Collected: 09/27/18 11:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 11:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 11:36	74-85-1	
Methane	**40.3**	ug/L	10.0	4.9	1		10/02/18 11:36	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:43	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:43	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:43	7440-38-2	
Barium, Dissolved	**91.9**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:43	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:43	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:43	7440-43-9	
Calcium, Dissolved	**37500**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:43	7440-70-2	
Chromium, Dissolved	**0.87J**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:43	7440-47-3	
Cobalt, Dissolved	**1.5J**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:43	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:43	7440-50-8	
Iron, Dissolved	**2120**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:43	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:43	7439-92-1	
Magnesium, Dissolved	**10300**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:43	7439-95-4	
Manganese, Dissolved	**1020**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:43	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:43	7440-02-0	
Potassium, Dissolved	**2910**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:43	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:43	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:43	7440-22-4	
Sodium, Dissolved	**15300**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:43	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:43	7440-28-0	
Vanadium, Dissolved	**0.66J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:43	7440-62-2	B
Zinc, Dissolved	**4.1J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:43	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:17	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**180**	mg/L	5.0	1.0	1		10/10/18 09:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**217**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:28	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.6**	mg/L	1.2	0.28	1		09/28/18 21:31	16887-00-6	
Nitrate as N	**0.052J**	mg/L	0.10	0.015	1		09/28/18 21:31	14797-55-8	
Sulfate	**1.7**	mg/L	1.2	0.19	1		09/28/18 21:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW2D-GW-092718 **Lab ID: 10449490004** Collected: 09/27/18 11:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.023J**	mg/L	0.10	0.018	1		10/05/18 10:51		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:55		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.9**	mg/L	1.0	0.20	1		10/02/18 04:10	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW1D-GW-092718 **Lab ID: 10449490005** Collected: 09/27/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 11:44	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 11:44	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 11:44	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:45	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:45	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:45	7440-38-2	
Barium, Dissolved	**72.0**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:45	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:45	7440-41-7	
Cadmium, Dissolved	**0.30J**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:45	7440-43-9	
Calcium, Dissolved	**49400**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:45	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:45	7440-47-3	
Cobalt, Dissolved	**1.0J**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:45	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:45	7440-50-8	
Iron, Dissolved	**10.4J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:45	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:45	7439-92-1	
Magnesium, Dissolved	**12300**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:45	7439-95-4	
Manganese, Dissolved	**48.9**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:45	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:45	7440-02-0	
Potassium, Dissolved	**1090J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:45	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:45	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:45	7440-22-4	
Sodium, Dissolved	**10800**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:45	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:45	7440-28-0	
Vanadium, Dissolved	**1.7J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:45	7440-62-2	B
Zinc, Dissolved	**5.2J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:45	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:19	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**191**	mg/L	5.0	1.0	1		10/10/18 09:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**206**	mg/L	10.0	5.0	1		10/03/18 14:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/02/18 13:29	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.8**	mg/L	1.2	0.28	1		09/28/18 21:46	16887-00-6	
Nitrate as N	**0.12**	mg/L	0.10	0.015	1		09/28/18 21:46	14797-55-8	
Sulfate	**5.3**	mg/L	1.2	0.19	1		09/28/18 21:46	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: MW1D-GW-092718 **Lab ID: 10449490005** Collected: 09/27/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.12**	mg/L	0.10	0.018	1		10/05/18 10:52		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**17.3J**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:55		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.86J**	mg/L	1.0	0.20	1		10/02/18 04:24	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: FD4-092718 **Lab ID: 10449490006** Collected: 09/27/18 07:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 11:51	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 11:51	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 11:51	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**30.7J**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:46	7429-90-5	B
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:46	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:46	7440-38-2	
Barium, Dissolved	**28.6**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:46	7440-39-3	
Beryllium, Dissolved	**0.14J**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:46	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:46	7440-43-9	
Calcium, Dissolved	**52600**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:46	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:46	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:46	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:46	7440-50-8	
Iron, Dissolved	**9.8J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:46	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:46	7439-92-1	
Magnesium, Dissolved	**15300**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:46	7439-95-4	
Manganese, Dissolved	**1.3J**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:46	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:46	7440-02-0	
Potassium, Dissolved	**2260J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:46	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:46	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:46	7440-22-4	
Sodium, Dissolved	**16100**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:46	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:46	7440-28-0	
Vanadium, Dissolved	**7.9J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:46	7440-62-2	
Zinc, Dissolved	**2.9J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:46	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:21	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**170**	mg/L	5.0	1.0	1		10/10/18 09:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**314**	mg/L	10.0	5.0	1		10/04/18 10:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/04/18 09:29	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**12.1**	mg/L	1.2	0.28	1		09/28/18 22:01	16887-00-6	
Nitrate as N	**3.9**	mg/L	0.10	0.015	1		09/28/18 22:01	14797-55-8	
Sulfate	**35.3**	mg/L	1.2	0.19	1		09/28/18 22:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: FD4-092718 **Lab ID: 10449490006** Collected: 09/27/18 07:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.7**	mg/L	0.50	0.088	5		10/05/18 11:17		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**17.6J**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:56		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.5**	mg/L	1.0	0.20	1		10/02/18 04:38	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: FD5-092718 **Lab ID: 10449490007** Collected: 09/27/18 07:30 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Ethane	**<3.0**	ug/L	10.0	3.0	1		10/02/18 11:58	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		10/02/18 11:58	74-85-1	
Methane	**<4.9**	ug/L	10.0	4.9	1		10/02/18 11:58	74-82-8	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	10/02/18 14:52	10/04/18 14:48	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	10/02/18 14:52	10/04/18 14:48	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	10/02/18 14:52	10/04/18 14:48	7440-38-2	
Barium, Dissolved	**19.3**	ug/L	10.0	0.18	1	10/02/18 14:52	10/04/18 14:48	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	10/02/18 14:52	10/04/18 14:48	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	10/02/18 14:52	10/04/18 14:48	7440-43-9	
Calcium, Dissolved	**49800**	ug/L	500	13.9	1	10/02/18 14:52	10/04/18 14:48	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	10/02/18 14:52	10/04/18 14:48	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	10/02/18 14:52	10/04/18 14:48	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	10/02/18 14:52	10/04/18 14:48	7440-50-8	
Iron, Dissolved	**9.9J**	ug/L	50.0	4.3	1	10/02/18 14:52	10/04/18 14:48	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	10/02/18 14:52	10/04/18 14:48	7439-92-1	
Magnesium, Dissolved	**13800**	ug/L	500	9.8	1	10/02/18 14:52	10/04/18 14:48	7439-95-4	
Manganese, Dissolved	**1.2J**	ug/L	5.0	0.22	1	10/02/18 14:52	10/04/18 14:48	7439-96-5	
Nickel, Dissolved	**3.4J**	ug/L	20.0	1.1	1	10/02/18 14:52	10/04/18 14:48	7440-02-0	
Potassium, Dissolved	**1720J**	ug/L	2500	310	1	10/02/18 14:52	10/04/18 14:48	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	10/02/18 14:52	10/04/18 14:48	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	10/02/18 14:52	10/04/18 14:48	7440-22-4	
Sodium, Dissolved	**12900**	ug/L	1000	21.5	1	10/02/18 14:52	10/04/18 14:48	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	10/02/18 14:52	10/04/18 14:48	7440-28-0	
Vanadium, Dissolved	**7.0J**	ug/L	15.0	0.29	1	10/02/18 14:52	10/04/18 14:48	7440-62-2	
Zinc, Dissolved	**2.8J**	ug/L	20.0	2.5	1	10/02/18 14:52	10/04/18 14:48	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	10/02/18 18:05	10/08/18 16:23	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**159**	mg/L	5.0	1.0	1		10/10/18 09:24		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**313**	mg/L	10.0	5.0	1		10/04/18 10:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		10/04/18 09:33	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**11.4**	mg/L	1.2	0.28	1		09/28/18 22:16	16887-00-6	
Nitrate as N	**5.8**	mg/L	0.10	0.015	1		09/28/18 22:16	14797-55-8	
Sulfate	**34.4**	mg/L	1.2	0.19	1		09/28/18 22:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Sample: FD5-092718 **Lab ID: 10449490007** Collected: 09/27/18 07:30 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.7**	mg/L	0.50	0.088	5		10/05/18 11:19		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	10/11/18 11:54	10/11/18 15:56		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.3**	mg/L	1.0	0.20	1		10/02/18 04:52	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 566474 | Analysis Method: RSK 175
QC Batch Method: RSK 175 | Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3073649 | Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	10/02/18 09:08	
Ethene	ug/L	<2.9	10.0	2.9	10/02/18 09:08	
Methane	ug/L	<4.9	10.0	4.9	10/02/18 09:08	

LABORATORY CONTROL SAMPLE & LCSD: 3073650 | 3073651

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	112	113	99	99	85-115	1	20	
Ethene	ug/L	106	107	107	101	100	85-115	0	20	
Methane	ug/L	60.7	60.7	61.3	100	101	85-115	1	20	

SAMPLE DUPLICATE: 3073652

Parameter	Units	7595397001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	0.50 mg/L	618	21	20	R1

SAMPLE DUPLICATE: 3073653

Parameter	Units	10449650001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	17.2	11.0	44	20	R1
Ethene	ug/L	224	141	45	20	R1
Methane	ug/L	1560	950	48	20	R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 566259 — Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A — Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3072849 — Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	10/08/18 15:52	

LABORATORY CONTROL SAMPLE: 3072850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072851 3072852

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	0.29	5	5	5.0	5.0	95	93	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 566278 — Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 — Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3072929 — Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	31.2J	200	15.5	10/04/18 14:19	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	10/04/18 14:19	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	10/04/18 14:19	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	10/04/18 14:19	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	10/04/18 14:19	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	10/04/18 14:19	
Calcium, Dissolved	ug/L	<13.9	500	13.9	10/04/18 14:19	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	10/04/18 14:19	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	10/04/18 14:19	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	10/04/18 14:19	
Iron, Dissolved	ug/L	10.6J	50.0	4.3	10/04/18 14:19	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	10/04/18 14:19	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	10/04/18 14:19	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	10/04/18 14:19	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	10/04/18 14:19	
Potassium, Dissolved	ug/L	<310	2500	310	10/04/18 14:19	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	10/04/18 14:19	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	10/04/18 14:19	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	10/04/18 14:19	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	10/04/18 14:19	
Vanadium, Dissolved	ug/L	0.46J	15.0	0.29	10/04/18 14:19	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	10/04/18 14:19	

LABORATORY CONTROL SAMPLE: 3072930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20300	101	80-120	
Antimony, Dissolved	ug/L	1000	941	94	80-120	
Arsenic, Dissolved	ug/L	1000	906	91	80-120	
Barium, Dissolved	ug/L	1000	952	95	80-120	
Beryllium, Dissolved	ug/L	1000	955	95	80-120	
Cadmium, Dissolved	ug/L	1000	948	95	80-120	
Calcium, Dissolved	ug/L	20000	18400	92	80-120	
Chromium, Dissolved	ug/L	1000	940	94	80-120	
Cobalt, Dissolved	ug/L	1000	943	94	80-120	
Copper, Dissolved	ug/L	1000	902	90	80-120	
Iron, Dissolved	ug/L	20000	18800	94	80-120	
Lead, Dissolved	ug/L	1000	942	94	80-120	
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	954	95	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

LABORATORY CONTROL SAMPLE: 3072930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	936	94	80-120	
Potassium, Dissolved	ug/L	20000	18800	94	80-120	
Selenium, Dissolved	ug/L	1000	975	97	80-120	
Silver, Dissolved	ug/L	500	471	94	80-120	
Sodium, Dissolved	ug/L	20000	18200	91	80-120	
Thallium, Dissolved	ug/L	1000	936	94	80-120	
Vanadium, Dissolved	ug/L	1000	935	93	80-120	
Zinc, Dissolved	ug/L	1000	952	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072931 3072932

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	62.4J	20000	20000	19700	18900	98	94	75-125	4	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	978	979	98	98	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	890	853	89	85	75-125	4	20	
Barium, Dissolved	ug/L	43.2	1000	1000	954	915	91	87	75-125	4	20	
Beryllium, Dissolved	ug/L	0.13J	1000	1000	940	900	94	90	75-125	4	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	919	881	92	88	75-125	4	20	
Calcium, Dissolved	ug/L	61000	20000	20000	79000	77000	90	80	75-125	3	20	
Chromium, Dissolved	ug/L	0.53J	1000	1000	913	876	91	88	75-125	4	20	
Cobalt, Dissolved	ug/L	0.53J	1000	1000	894	861	89	86	75-125	4	20	
Copper, Dissolved	ug/L	1.5J	1000	1000	889	850	89	85	75-125	5	20	
Iron, Dissolved	ug/L	62.4	20000	20000	18400	17700	92	88	75-125	4	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	901	866	90	87	75-125	4	20	
Magnesium, Dissolved	ug/L	19300	20000	20000	38200	37100	94	89	75-125	3	20	
Manganese, Dissolved	ug/L	3.7J	1000	1000	928	879	92	88	75-125	5	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	889	852	89	85	75-125	4	20	
Potassium, Dissolved	ug/L	1680J	20000	20000	20800	19900	96	91	75-125	4	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	935	900	93	90	75-125	4	20	
Silver, Dissolved	ug/L	<0.38	500	500	463	445	93	89	75-125	4	20	
Sodium, Dissolved	ug/L	15100	20000	20000	32900	31700	89	83	75-125	4	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	900	860	90	86	75-125	4	20	
Vanadium, Dissolved	ug/L	5.8J	1000	1000	913	876	91	87	75-125	4	20	
Zinc, Dissolved	ug/L	4.6J	1000	1000	910	869	91	86	75-125	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 568265 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3083861 Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	10/10/18 07:56	

LABORATORY CONTROL SAMPLE & LCSD: 3083862 3083863

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	38.9	39.1	97	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083864 3083865

Parameter	Units	10450292002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	316	40	40	355	349	97	82	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083866 3083867

Parameter	Units	10450292003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	280	40	40	325	329	112	123	80-120	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 566834 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005

METHOD BLANK: 3075546 | Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/03/18 14:29	

LABORATORY CONTROL SAMPLE: 3075547

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	988	99	80-120	

SAMPLE DUPLICATE: 3075548

Parameter	Units	10449442002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	325	345	6	5	D6

SAMPLE DUPLICATE: 3075549

Parameter	Units	10449807003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	253	254	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 567147 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10449490006, 10449490007

METHOD BLANK: 3077422 Matrix: Water
Associated Lab Samples: 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	10/04/18 10:59	

LABORATORY CONTROL SAMPLE: 3077423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	970	97	80-120	

SAMPLE DUPLICATE: 3077424

Parameter	Units	10449807015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	623	597	4	5	

SAMPLE DUPLICATE: 3077425

Parameter	Units	10449807017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	876	920	5	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 121973 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005

METHOD BLANK: 525900 Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/02/18 12:31	

LABORATORY CONTROL SAMPLE: 525901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.21	104	90-110	

MATRIX SPIKE SAMPLE: 525903

Parameter	Units	10449442002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	.2	0.073	36	75-125	M1

SAMPLE DUPLICATE: 525902

Parameter	Units	10449442002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 122220 | Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D | Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10449490006, 10449490007

METHOD BLANK: 527081 | Matrix: Water
Associated Lab Samples: 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	10/04/18 09:17	

LABORATORY CONTROL SAMPLE: 527082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 527084

Parameter	Units	2085191001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.058	29	75-125	M1

SAMPLE DUPLICATE: 527083

Parameter	Units	2085191001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 566009 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3071263 Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	09/28/18 18:21	
Nitrate as N	mg/L	<0.015	0.10	0.015	09/28/18 18:21	
Sulfate	mg/L	<0.19	1.2	0.19	09/28/18 18:21	

LABORATORY CONTROL SAMPLE: 3071264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.92	92	90-110	
Sulfate	mg/L	12.5	12.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071265 3071266

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.9	12.5	12.5	17.1	17.2	90	90	90-110	0	20	
Nitrate as N	mg/L	5.6	1	1	5.7	5.7	8	10	90-110	0	20	M1
Sulfate	mg/L	18.3	12.5	12.5	28.8	28.7	84	83	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071267 3071268

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.5	12.5	12.5	15.9	15.9	91	91	90-110	0	20	
Nitrate as N	mg/L	1.9	1	1	2.6	2.6	68	68	90-110	0	20	M1
Sulfate	mg/L	7.2	12.5	12.5	19.2	19.1	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071921 3071922

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.1	12.5	12.5	14.7	14.7	93	93	90-110	0	20	
Nitrate as N	mg/L	<0.015	1	1	0.92	0.91	92	91	90-110	0	20	
Sulfate	mg/L	10.3	12.5	12.5	21.9	21.8	92	92	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 567424 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449490001

METHOD BLANK: 3079205 | Matrix: Water
Associated Lab Samples: 10449490001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	10/05/18 10:42	FS

LABORATORY CONTROL SAMPLE: 3079206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079207 3079208

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	5.4	5	5	10.8	10.2	108	95	90-110	6	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079209 3079210

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.8	1	1	2.9	2.9	105	103	90-110	1	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 567425 — Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 — Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3079211 — Matrix: Water
Associated Lab Samples: 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	10/05/18 11:02	

LABORATORY CONTROL SAMPLE: 3079212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.93	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3079213 3079214

Parameter	Units	10449490002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	3.5	5	5	9.0	9.0	110	110	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 568045 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10449490001, 10449490002

METHOD BLANK: 3082624 Matrix: Water
Associated Lab Samples: 10449490001, 10449490002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	30.8J	50.0	17.0	10/09/18 17:43	

LABORATORY CONTROL SAMPLE: 3082625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	303	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082626 3082627

Parameter	Units	10449442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	248	267	98	106	90-110	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082628 3082629

Parameter	Units	10449442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	33.1J	250	250	248	272	86	95	90-110	9	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 568586 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 3085389 Matrix: Water
Associated Lab Samples: 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	10/11/18 15:54	

LABORATORY CONTROL SAMPLE: 3085390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085391 3085392

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	243	246	94	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085393 3085394

Parameter	Units	10449490003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	247	249	96	97	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

QC Batch: 153378 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

METHOD BLANK: 606762 Matrix: Water
Associated Lab Samples: 10449490001, 10449490002, 10449490003, 10449490004, 10449490005, 10449490006, 10449490007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.21J	1.0	0.20	10/02/18 00:54	

LABORATORY CONTROL SAMPLE: 606763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606764 606765

Parameter	Units	10449213001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	<0.20	25	25	25.7	25.6	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606766 606767

Parameter	Units	10449444002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.2	25	25	26.7	25.8	102	98	80-120	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449490

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-N	Pace Analytical Services - New Orleans
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449490001	**MW3D-GW-092718**	RSK 175	566474		
10449490002	**MW9D-GW-092718**	RSK 175	566474		
10449490003	**MW9U-GW-092718**	RSK 175	566474		
10449490004	**MW2D-GW-092718**	RSK 175	566474		
10449490005	**MW1D-GW-092718**	RSK 175	566474		
10449490006	**FD4-092718**	RSK 175	566474		
10449490007	**FD5-092718**	RSK 175	566474		
10449490001	**MW3D-GW-092718**	EPA 3010	566278	EPA 6010D	566813
10449490002	**MW9D-GW-092718**	EPA 3010	566278	EPA 6010D	566813
10449490003	**MW9U-GW-092718**	EPA 3010	566278	EPA 6010D	566813
10449490004	**MW2D-GW-092718**	EPA 3010	566278	EPA 6010D	566813
10449490005	**MW1D-GW-092718**	EPA 3010	566278	EPA 6010D	566813
10449490006	**FD4-092718**	EPA 3010	566278	EPA 6010D	566813
10449490007	**FD5-092718**	EPA 3010	566278	EPA 6010D	566813
10449490001	**MW3D-GW-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490002	**MW9D-GW-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490003	**MW9U-GW-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490004	**MW2D-GW-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490005	**MW1D-GW-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490006	**FD4-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490007	**FD5-092718**	EPA 7470A	566259	EPA 7470A	566911
10449490001	**MW3D-GW-092718**	SM 2320B	568265		
10449490002	**MW9D-GW-092718**	SM 2320B	568265		
10449490003	**MW9U-GW-092718**	SM 2320B	568265		
10449490004	**MW2D-GW-092718**	SM 2320B	568265		
10449490005	**MW1D-GW-092718**	SM 2320B	568265		
10449490006	**FD4-092718**	SM 2320B	568265		
10449490007	**FD5-092718**	SM 2320B	568265		
10449490001	**MW3D-GW-092718**	SM 2540C	566834		
10449490002	**MW9D-GW-092718**	SM 2540C	566834		
10449490003	**MW9U-GW-092718**	SM 2540C	566834		
10449490004	**MW2D-GW-092718**	SM 2540C	566834		
10449490005	**MW1D-GW-092718**	SM 2540C	566834		
10449490006	**FD4-092718**	SM 2540C	567147		
10449490007	**FD5-092718**	SM 2540C	567147		
10449490001	**MW3D-GW-092718**	SM 4500-S-2 D	121973		
10449490002	**MW9D-GW-092718**	SM 4500-S-2 D	121973		
10449490003	**MW9U-GW-092718**	SM 4500-S-2 D	121973		
10449490004	**MW2D-GW-092718**	SM 4500-S-2 D	121973		
10449490005	**MW1D-GW-092718**	SM 4500-S-2 D	121973		
10449490006	**FD4-092718**	SM 4500-S-2 D	122220		
10449490007	**FD5-092718**	SM 4500-S-2 D	122220		
10449490001	**MW3D-GW-092718**	EPA 300.0	566009		
10449490002	**MW9D-GW-092718**	EPA 300.0	566009		
10449490003	**MW9U-GW-092718**	EPA 300.0	566009		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449490

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449490004	**MW2D-GW-092718**	EPA 300.0	566009		
10449490005	**MW1D-GW-092718**	EPA 300.0	566009		
10449490006	**FD4-092718**	EPA 300.0	566009		
10449490007	**FD5-092718**	EPA 300.0	566009		
10449490001	**MW3D-GW-092718**	EPA 353.2	567424		
10449490002	**MW9D-GW-092718**	EPA 353.2	567425		
10449490003	**MW9U-GW-092718**	EPA 353.2	567425		
10449490004	**MW2D-GW-092718**	EPA 353.2	567425		
10449490005	**MW1D-GW-092718**	EPA 353.2	567425		
10449490006	**FD4-092718**	EPA 353.2	567425		
10449490007	**FD5-092718**	EPA 353.2	567425		
10449490001	**MW3D-GW-092718**	EPA 410.4	568045	EPA 410.4	568193
10449490002	**MW9D-GW-092718**	EPA 410.4	568045	EPA 410.4	568193
10449490003	**MW9U-GW-092718**	EPA 410.4	568586	EPA 410.4	568740
10449490004	**MW2D-GW-092718**	EPA 410.4	568586	EPA 410.4	568740
10449490005	**MW1D-GW-092718**	EPA 410.4	568586	EPA 410.4	568740
10449490006	**FD4-092718**	EPA 410.4	568586	EPA 410.4	568740
10449490007	**FD5-092718**	EPA 410.4	568586	EPA 410.4	568740
10449490001	**MW3D-GW-092718**	SM 5310C	153378		
10449490002	**MW9D-GW-092718**	SM 5310C	153378		
10449490003	**MW9U-GW-092718**	SM 5310C	153378		
10449490004	**MW2D-GW-092718**	SM 5310C	153378		
10449490005	**MW1D-GW-092718**	SM 5310C	153378		
10449490006	**FD4-092718**	SM 5310C	153378		
10449490007	**FD5-092718**	SM 5310C	153378		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b

WO# : 10449490

10449490

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	***10 Day Standard***

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	***36447 / 4***

Regulatory Agency

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested	
1	MW3d-GW-092718	WT	G	9/27 2018	915	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		001
2	MW9d-GW-092718				1000	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		002
3	MW9u-GW-092718				1045	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		003
4	MW2d-GW-092718				1145	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		004
5	MW1d-GW-092718				1245	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		005
6	FD4-092718				700	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		006
7	FD5-092718				730	—	—	—	9	X	X	X		X				X	X	X	X	X	X	X	X	X		007
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jth Li / Jacobs	9/27/18	1600	Pace	9/28/18	1000	0.6	Y	Y	Y
*Field filtered by client							4.4			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: Jth Li

DATE Signed: 9/27/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill - UPRR

Project #: WO# : 10449490

PM: JMG Due Date: 10/05/18
CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4667/4678

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 04.4.2 **Cooler Temp Corrected (°C):** 06.4.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** AF 9/28/18

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No		1.
Chain of Custody Filled Out?	☑ Yes	☐ No		2.
Chain of Custody Relinquished?	☑ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		6.
Rush Turn Around Time Requested?	☐ Yes	☑ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☑ Yes	☐ No		8. No ms/msd provided
Correct Containers Used?	☑ Yes	☐ No		9.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	~~☑ N/A~~ AF 9/28/18	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☑ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☑ NaOH ZN Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-7: 1/1 1/1 1/1
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK or sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1340	Temp: 04.4.2	Corrected Temp: 06.4.4
Time: 1400	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 09/28/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: AJ

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
Cert. Needed: ☒ Yes ☐ No

Workorder: 10449490 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Requested Analysis: 5632354 / 5310 TOC

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4 DG9S	5632354 / 5310 TOC	LAB USE ONLY
1	MW3D-GW-092718	PS	9/27/2018 09:15	10449490001	Water	2	X	
2	MW9D-GW-092718	PS	9/27/2018 10:00	10449490002	Water	2	X	
3	MW9U-GW-092718	PS	9/27/2018 10:45	10449490003	Water	2	X	
4	MW2D-GW-092718	PS	9/27/2018 11:45	10449490004	Water	2	X	
5	MW1D-GW-092718	PS	9/27/2018 12:45	10449490005	Water	2	X	
6	FD4-092718	PS	9/27/2018 07:00	10449490006	Water	2	X	
7	FD5-092718	PS	9/27/2018 07:30	10449490007	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] / Pace	9/28/18 1535	DCL 9.28.18	1950	
2	DCL 9-28-18	2330	B. Mathews	10/1/18 0900	
3					

Cooler Temperature on Receipt 0.7 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO# : 12116543

PM: CLJ Due Date: 10/12/18

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other: ____

Tracking Number: ____

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: ____

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7

Temp should be above freezing to 6°C Correction Factor: 0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Date and Initials of Person Examining Contents: 9-28-18 PL

Comments: BM 10/1/18

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): ____				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jensen **Date:** 10/1/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 2084998

2084998

Chain of Custody

☐ Samples were sent direc

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www.pacelabs.com

State Of Origin: WA
Cert. Needed: ☐ Yes ☒ No

Workorder: 10449490 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 9/28/2018 Results Requested By: 10/12/2018

Report To	Subcontract To
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333

Preserved Containers / Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other	BP2Z NaOH-Zinc Acetate	5636267 / 4500 Sulfide	LAB USE ONLY
1	MW3D-GW-092718	PS	9/27/2018 09:15	10449490001	Water		1	X	
2	MW9D-GW-092718	PS	9/27/2018 10:00	10449490002	Water		1	X	
3	MW9U-GW-092718	PS	9/27/2018 10:45	10449490003	Water		1	X	
4	MW2D-GW-092718	PS	9/27/2018 11:45	10449490004	Water		1	X	
5	MW1D-GW-092718	PS	9/27/2018 12:45	10449490005	Water		1	X	
6	FD4-092718	PS	9/27/2018 07:00	10449490006	Water		1	X	
7	FD5-092718	PS	9/27/2018 07:30	10449490007	Water		1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	9/28/18 1610		
2	Fed Ex	9/29/18 0845	[signature] Pace	9/29/18 0845
3				

Comments

Cooler Temperature on Receipt 2.1 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

Sample Condition Upon R

WO#: 2084998
PM: CMM Due Date: 10/12/18
CLIENT: PASI-MINN

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Project #: 20

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☑Yes ☐No

Therometer Used:	☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10-1-18 J

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preservative added? ☐Yes ☐No If added record lot no.: HNO3 ____ H2SO4 ____
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14
Trip Blank Present:	☐Yes ☑No	15

Client Notification/ Resolution:

Person Contacted: ____________ Date/Time: ____________

Comments/ Resolution: ____________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 05, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449493

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449493001	**MW3D-GW-092718**	Water	09/27/18 09:15	09/28/18 10:00
10449493002	**MW9D-GW-092718**	Water	09/27/18 10:00	09/28/18 10:00
10449493003	**MW9U-GW-092718**	Water	09/27/18 10:45	09/28/18 10:00
10449493004	**MW2D-GW-092718**	Water	09/27/18 11:45	09/28/18 10:00
10449493005	**MW1D-GW-092718**	Water	09/27/18 12:45	09/28/18 10:00
10449493006	**FD4-092718**	Water	09/27/18 07:00	09/28/18 10:00
10449493007	**FD5-092718**	Water	09/27/18 07:30	09/28/18 10:00
10449493008	**TB-092718**	Water	09/27/18 09:00	09/28/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449493001	**MW3D-GW-092718**	EPA 8260B	AEZ	83	PASI-M
10449493002	**MW9D-GW-092718**	EPA 8260B	AEZ	83	PASI-M
10449493003	**MW9U-GW-092718**	EPA 8260B	AEZ	83	PASI-M
10449493004	**MW2D-GW-092718**	EPA 8260B	AEZ	83	PASI-M
10449493005	**MW1D-GW-092718**	EPA 8260B	AEZ	83	PASI-M
10449493006	**FD4-092718**	EPA 8260B	AEZ	83	PASI-M
10449493007	**FD5-092718**	EPA 8260B	AEZ	83	PASI-M
10449493008	**TB-092718**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449493002	**MW9D-GW-092718**					
EPA 8260B	Carbon tetrachloride	96.6	ug/L	5.0	10/05/18 14:00	HS
EPA 8260B	Chloroform	4.1	ug/L	1.0	10/05/18 06:42	
10449493003	**MW9U-GW-092718**					
EPA 8260B	Carbon tetrachloride	618	ug/L	25.0	10/05/18 05:30	
EPA 8260B	Chloroform	14.8	ug/L	2.0	10/05/18 06:18	
10449493006	**FD4-092718**					
EPA 8260B	Carbon tetrachloride	101	ug/L	5.0	10/05/18 13:36	HS
EPA 8260B	Chloroform	4.2	ug/L	1.0	10/05/18 03:05	
10449493007	**FD5-092718**					
EPA 8260B	Carbon disulfide	0.42J	ug/L	1.0	10/05/18 03:29	
EPA 8260B	Carbon tetrachloride	623	ug/L	25.0	10/05/18 13:12	
EPA 8260B	Chloroform	16.0	ug/L	1.0	10/05/18 03:29	

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PROJECT NARRATIVE

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449493

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

General Information:
8 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 567352

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3078682)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FD4-092718 (Lab ID: 10449493006)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FD5-092718 (Lab ID: 10449493007)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 05, 2018

Analyte Comments:

QC Batch: 567352

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- FD5-092718 (Lab ID: 10449493007)
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3078683)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3078684)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3078685)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW1D-GW-092718 (Lab ID: 10449493005)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW2D-GW-092718 (Lab ID: 10449493004)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW3D-GW-092718 (Lab ID: 10449493001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW9D-GW-092718 (Lab ID: 10449493002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW9U-GW-092718 (Lab ID: 10449493003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- TB-092718 (Lab ID: 10449493008)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW3D-GW-092718 **Lab ID: 10449493001** Collected: 09/27/18 09:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 01:53	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:53	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 01:53	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:53	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:53	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:53	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 01:53	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 01:53	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:53	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 01:53	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:53	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:53	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:53	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:53	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:53	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:53	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:53	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 01:53	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:53	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 01:53	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 01:53	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 01:53	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 01:53	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:53	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 01:53	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 01:53	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 01:53	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:53	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 01:53	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 01:53	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 01:53	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 01:53	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 01:53	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 01:53	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 01:53	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 01:53	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 01:53	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:53	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 01:53	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 01:53	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 01:53	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 01:53	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW3D-GW-092718 **Lab ID: 10449493001** Collected: 09/27/18 09:15 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:53	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 01:53	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 01:53	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 01:53	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 01:53	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 01:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 01:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:53	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 01:53	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 01:53	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 01:53	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 01:53	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 01:53	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 01:53	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 01:53	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 01:53	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 01:53	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 01:53	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 01:53	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 01:53	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 01:53	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 01:53	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 01:53	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 01:53	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 01:53	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 01:53	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:53	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:53	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 01:53	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 01:53	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 01:53	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 01:53	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 01:53	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 01:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		10/05/18 01:53	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		10/05/18 01:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 01:53	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW9D-GW-092718 **Lab ID: 10449493002** Collected: 09/27/18 10:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 06:42	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 06:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 06:42	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 06:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 06:42	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 06:42	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 06:42	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 06:42	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 06:42	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 06:42	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 06:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 06:42	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 06:42	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 06:42	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 06:42	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 06:42	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 06:42	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 06:42	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 06:42	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 06:42	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 06:42	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 06:42	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 06:42	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 06:42	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 06:42	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 06:42	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 06:42	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 06:42	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 06:42	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 06:42	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 06:42	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 06:42	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 06:42	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 06:42	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 06:42	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 06:42	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 06:42	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 06:42	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 06:42	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 06:42	75-15-0	
Carbon tetrachloride	**96.6**	ug/L	5.0	1.9	10		10/05/18 14:00	56-23-5	HS
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 06:42	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 06:42	75-00-3	
Chloroform	**4.1**	ug/L	1.0	0.45	1		10/05/18 06:42	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 06:42	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 06:42	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW9D-GW-092718 **Lab ID: 10449493002** Collected: 09/27/18 10:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 06:42	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 06:42	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 06:42	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 06:42	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 06:42	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 06:42	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 06:42	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 06:42	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 06:42	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 06:42	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 06:42	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 06:42	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 06:42	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 06:42	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 06:42	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 06:42	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 06:42	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 06:42	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 06:42	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 06:42	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 06:42	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 06:42	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 06:42	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 06:42	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 06:42	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 06:42	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 06:42	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 06:42	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 06:42	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 06:42	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 06:42	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 06:42	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 06:42	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 06:42	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 06:42	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		10/05/18 06:42	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 06:42	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW9U-GW-092718 **Lab ID: 10449493003** Collected: 09/27/18 10:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.39**	ug/L	1.0	0.39	2		10/05/18 06:18	630-20-6	
1,1,1-Trichloroethane	**<0.27**	ug/L	2.0	0.27	2		10/05/18 06:18	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.34**	ug/L	1.0	0.34	2		10/05/18 06:18	79-34-5	
1,1,2-Trichloroethane	**<0.36**	ug/L	1.0	0.36	2		10/05/18 06:18	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.43**	ug/L	2.0	0.43	2		10/05/18 06:18	76-13-1	
1,1-Dichloroethane	**<0.34**	ug/L	1.0	0.34	2		10/05/18 06:18	75-34-3	
1,1-Dichloroethene	**<0.32**	ug/L	1.0	0.32	2		10/05/18 06:18	75-35-4	
1,1-Dichloropropene	**<0.40**	ug/L	2.0	0.40	2		10/05/18 06:18	563-58-6	
1,2,3-Trichlorobenzene	**<0.41**	ug/L	2.0	0.41	2		10/05/18 06:18	87-61-6	
1,2,3-Trichloropropane	**<0.51**	ug/L	8.0	0.51	2		10/05/18 06:18	96-18-4	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	2.0	0.40	2		10/05/18 06:18	120-82-1	
1,2,4-Trimethylbenzene	**<0.39**	ug/L	2.0	0.39	2		10/05/18 06:18	95-63-6	
1,2-Dibromo-3-chloropropane	**<3.3**	ug/L	8.0	3.3	2		10/05/18 06:18	96-12-8	
1,2-Dibromoethane (EDB)	**<0.48**	ug/L	2.0	0.48	2		10/05/18 06:18	106-93-4	
1,2-Dichlorobenzene	**<0.27**	ug/L	1.0	0.27	2		10/05/18 06:18	95-50-1	
1,2-Dichloroethane	**<0.44**	ug/L	1.0	0.44	2		10/05/18 06:18	107-06-2	
1,2-Dichloroethene (Total)	**<0.54**	ug/L	2.0	0.54	2		10/05/18 06:18	540-59-0	N2
1,2-Dichloropropane	**<0.33**	ug/L	8.0	0.33	2		10/05/18 06:18	78-87-5	
1,3,5-Trimethylbenzene	**<0.24**	ug/L	1.0	0.24	2		10/05/18 06:18	108-67-8	
1,3-Dichlorobenzene	**<0.32**	ug/L	1.0	0.32	2		10/05/18 06:18	541-73-1	
1,3-Dichloropropane	**<0.14**	ug/L	1.0	0.14	2		10/05/18 06:18	142-28-9	
1,4-Dichlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 06:18	106-46-7	
1,4-Dioxane (p-Dioxane)	**<32.6**	ug/L	400	32.6	2		10/05/18 06:18	123-91-1	
2,2,4-Trimethylpentane	**<0.38**	ug/L	8.0	0.38	2		10/05/18 06:18	540-84-1	N2
2,2-Dichloropropane	**<0.34**	ug/L	2.0	0.34	2		10/05/18 06:18	594-20-7	
2-Butanone (MEK)	**<2.0**	ug/L	10.0	2.0	2		10/05/18 06:18	78-93-3	
2-Chlorotoluene	**<0.33**	ug/L	1.0	0.33	2		10/05/18 06:18	95-49-8	
2-Hexanone	**<1.8**	ug/L	10.0	1.8	2		10/05/18 06:18	591-78-6	
4-Chlorotoluene	**<0.27**	ug/L	2.0	0.27	2		10/05/18 06:18	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.84**	ug/L	10.0	0.84	2		10/05/18 06:18	108-10-1	
Acetone	**<18.5**	ug/L	40.0	18.5	2		10/05/18 06:18	67-64-1	
Acrolein	**<2.4**	ug/L	20.0	2.4	2		10/05/18 06:18	107-02-8	
Acrylonitrile	**<1.8**	ug/L	20.0	1.8	2		10/05/18 06:18	107-13-1	
Benzene	**<0.20**	ug/L	1.0	0.20	2		10/05/18 06:18	71-43-2	
Bromobenzene	**<0.41**	ug/L	1.0	0.41	2		10/05/18 06:18	108-86-1	
Bromochloromethane	**<0.55**	ug/L	2.0	0.55	2		10/05/18 06:18	74-97-5	
Bromodichloromethane	**<0.43**	ug/L	1.0	0.43	2		10/05/18 06:18	75-27-4	
Bromoform	**<1.6**	ug/L	8.0	1.6	2		10/05/18 06:18	75-25-2	
Bromomethane	**<3.6**	ug/L	8.0	3.6	2		10/05/18 06:18	74-83-9	
Carbon disulfide	**<0.16**	ug/L	2.0	0.16	2		10/05/18 06:18	75-15-0	
Carbon tetrachloride	**618**	ug/L	25.0	9.4	50		10/05/18 05:30	56-23-5	
Chlorobenzene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 06:18	108-90-7	
Chloroethane	**<0.98**	ug/L	2.0	0.98	2		10/05/18 06:18	75-00-3	
Chloroform	**14.8**	ug/L	2.0	0.90	2		10/05/18 06:18	67-66-3	
Chloromethane	**<0.31**	ug/L	8.0	0.31	2		10/05/18 06:18	74-87-3	
Dibromochloromethane	**<0.25**	ug/L	2.0	0.25	2		10/05/18 06:18	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW9U-GW-092718 **Lab ID: 10449493003** Collected: 09/27/18 10:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.33**	ug/L	2.0	0.33	2		10/05/18 06:18	74-95-3	
Dichlorodifluoromethane	**<0.47**	ug/L	2.0	0.47	2		10/05/18 06:18	75-71-8	
Dichlorofluoromethane	**<0.28**	ug/L	2.0	0.28	2		10/05/18 06:18	75-43-4	N2
Diisopropyl ether	**<0.27**	ug/L	2.0	0.27	2		10/05/18 06:18	108-20-3	
Ethyl-tert-butyl ether	**<0.36**	ug/L	1.0	0.36	2		10/05/18 06:18	637-92-3	
Ethylbenzene	**<0.28**	ug/L	1.0	0.28	2		10/05/18 06:18	100-41-4	
Hexachloro-1,3-butadiene	**<0.62**	ug/L	2.0	0.62	2		10/05/18 06:18	87-68-3	
Isopropylbenzene (Cumene)	**<0.37**	ug/L	2.0	0.37	2		10/05/18 06:18	98-82-8	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.0	0.32	2		10/05/18 06:18	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	8.0	2.0	2		10/05/18 06:18	75-09-2	
Naphthalene	**<0.96**	ug/L	2.0	0.96	2		10/05/18 06:18	91-20-3	
Styrene	**<0.37**	ug/L	2.0	0.37	2		10/05/18 06:18	100-42-5	
Tetrachloroethene	**<0.34**	ug/L	1.0	0.34	2		10/05/18 06:18	127-18-4	
Tetrahydrofuran	**<4.4**	ug/L	20.0	4.4	2		10/05/18 06:18	109-99-9	
Toluene	**<0.17**	ug/L	1.0	0.17	2		10/05/18 06:18	108-88-3	
Trichloroethene	**<0.30**	ug/L	0.80	0.30	2		10/05/18 06:18	79-01-6	
Trichlorofluoromethane	**<0.46**	ug/L	1.0	0.46	2		10/05/18 06:18	75-69-4	
Vinyl acetate	**<2.2**	ug/L	20.0	2.2	2		10/05/18 06:18	108-05-4	
Vinyl chloride	**<0.18**	ug/L	0.40	0.18	2		10/05/18 06:18	75-01-4	
Xylene (Total)	**<0.62**	ug/L	6.0	0.62	2		10/05/18 06:18	1330-20-7	
cis-1,2-Dichloroethene	**<0.31**	ug/L	1.0	0.31	2		10/05/18 06:18	156-59-2	
cis-1,3-Dichloropropene	**<0.41**	ug/L	2.0	0.41	2		10/05/18 06:18	10061-01-5	
m&p-Xylene	**<0.62**	ug/L	4.0	0.62	2		10/05/18 06:18	179601-23-1	
n-Butylbenzene	**<0.48**	ug/L	2.0	0.48	2		10/05/18 06:18	104-51-8	
n-Propylbenzene	**<0.20**	ug/L	2.0	0.20	2		10/05/18 06:18	103-65-1	
o-Xylene	**<0.32**	ug/L	2.0	0.32	2		10/05/18 06:18	95-47-6	
p-Isopropyltoluene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 06:18	99-87-6	
sec-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 06:18	135-98-8	
tert-Amylmethyl ether	**<0.22**	ug/L	1.0	0.22	2		10/05/18 06:18	994-05-8	
tert-Butyl Alcohol	**<2.5**	ug/L	20.0	2.5	2		10/05/18 06:18	75-65-0	
tert-Butylbenzene	**<0.30**	ug/L	2.0	0.30	2		10/05/18 06:18	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	2		10/05/18 06:18	156-60-5	
trans-1,3-Dichloropropene	**<0.36**	ug/L	2.0	0.36	2		10/05/18 06:18	10061-02-6	
trans-1,4-Dichloro-2-butene	**<4.1**	ug/L	20.0	4.1	2		10/05/18 06:18	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		2		10/05/18 06:18	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		2		10/05/18 06:18	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		2		10/05/18 06:18	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW2D-GW-092718 **Lab ID: 10449493004** Collected: 09/27/18 11:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 02:17	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 02:17	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:17	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 02:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 02:17	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:17	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:17	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:17	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 02:17	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 02:17	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:17	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:17	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 02:17	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 02:17	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 02:17	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 02:17	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 02:17	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 02:17	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 02:17	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:17	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 02:17	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:17	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 02:17	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 02:17	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 02:17	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 02:17	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:17	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 02:17	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 02:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 02:17	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 02:17	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 02:17	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 02:17	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 02:17	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 02:17	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 02:17	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 02:17	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 02:17	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 02:17	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 02:17	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 02:17	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:17	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 02:17	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 02:17	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 02:17	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 02:17	124-48-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW2D-GW-092718 **Lab ID: 10449493004** Collected: 09/27/18 11:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 02:17	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 02:17	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 02:17	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 02:17	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 02:17	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 02:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 02:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 02:17	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:17	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 02:17	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 02:17	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 02:17	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:17	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 02:17	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 02:17	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 02:17	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 02:17	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 02:17	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 02:17	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 02:17	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 02:17	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:17	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 02:17	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 02:17	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 02:17	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 02:17	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:17	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:17	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 02:17	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 02:17	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:17	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 02:17	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 02:17	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 02:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/05/18 02:17	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/05/18 02:17	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/05/18 02:17	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW1D-GW-092718 **Lab ID: 10449493005** Collected: 09/27/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 02:41	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 02:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:41	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 02:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 02:41	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:41	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:41	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 02:41	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 02:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 02:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 02:41	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 02:41	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 02:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 02:41	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 02:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 02:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:41	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 02:41	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 02:41	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 02:41	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 02:41	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 02:41	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:41	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 02:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 02:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 02:41	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 02:41	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 02:41	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 02:41	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 02:41	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 02:41	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 02:41	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 02:41	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 02:41	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 02:41	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 02:41	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/05/18 02:41	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:41	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 02:41	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/05/18 02:41	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 02:41	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 02:41	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: MW1D-GW-092718 **Lab ID: 10449493005** Collected: 09/27/18 12:45 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 02:41	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 02:41	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 02:41	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 02:41	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 02:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 02:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 02:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 02:41	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 02:41	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 02:41	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 02:41	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 02:41	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 02:41	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 02:41	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 02:41	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 02:41	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 02:41	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 02:41	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 02:41	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 02:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 02:41	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 02:41	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 02:41	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 02:41	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 02:41	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 02:41	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:41	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:41	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 02:41	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 02:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 02:41	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 02:41	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 02:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 02:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/05/18 02:41	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		10/05/18 02:41	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/05/18 02:41	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: FD4-092718 **Lab ID: 10449493006** Collected: 09/27/18 07:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 03:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 03:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 03:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 03:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 03:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:05	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 03:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 03:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 03:05	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 03:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 03:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 03:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 03:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 03:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 03:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 03:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 03:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 03:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 03:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/05/18 03:05	75-15-0	
Carbon tetrachloride	**101**	ug/L	5.0	1.9	10		10/05/18 13:36	56-23-5	HS
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 03:05	75-00-3	
Chloroform	**4.2**	ug/L	1.0	0.45	1		10/05/18 03:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 03:05	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449493

Sample: FD4-092718 **Lab ID: 10449493006** Collected: 09/27/18 07:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 03:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 03:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 03:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 03:05	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 03:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 03:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 03:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 03:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 03:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 03:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 03:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 03:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 03:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 03:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 03:05	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 03:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 03:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/05/18 03:05	17060-07-0	HS
Toluene-d8 (S)	102	%.	75-125		1		10/05/18 03:05	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/05/18 03:05	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: FD5-092718 **Lab ID: 10449493007** Collected: 09/27/18 07:30 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/05/18 03:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/05/18 03:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/05/18 03:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/05/18 03:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/05/18 03:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:29	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/05/18 03:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/05/18 03:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/05/18 03:29	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/05/18 03:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/05/18 03:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/05/18 03:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/05/18 03:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/05/18 03:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/05/18 03:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/05/18 03:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/05/18 03:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/05/18 03:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/05/18 03:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/05/18 03:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/05/18 03:29	74-83-9	
Carbon disulfide	**0.42J**	ug/L	1.0	0.078	1		10/05/18 03:29	75-15-0	
Carbon tetrachloride	**623**	ug/L	25.0	9.4	50		10/05/18 13:12	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/05/18 03:29	75-00-3	
Chloroform	**16.0**	ug/L	1.0	0.45	1		10/05/18 03:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/05/18 03:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/05/18 03:29	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: FD5-092718 **Lab ID: 10449493007** Collected: 09/27/18 07:30 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/05/18 03:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/05/18 03:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/05/18 03:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/05/18 03:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/05/18 03:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/05/18 03:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/05/18 03:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/05/18 03:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/05/18 03:29	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/05/18 03:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/05/18 03:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/05/18 03:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/05/18 03:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/05/18 03:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/05/18 03:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/05/18 03:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/05/18 03:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/05/18 03:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/05/18 03:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/05/18 03:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/05/18 03:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/05/18 03:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/05/18 03:29	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/05/18 03:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/05/18 03:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/05/18 03:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/05/18 03:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/05/18 03:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/05/18 03:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/05/18 03:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-125		1		10/05/18 03:29	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		10/05/18 03:29	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/05/18 03:29	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: TB-092718 **Lab ID: 10449493008** Collected: 09/27/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/04/18 21:52	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 21:52	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 21:52	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/04/18 21:52	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/04/18 21:52	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/04/18 21:52	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 21:52	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 21:52	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/04/18 21:52	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/04/18 21:52	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 21:52	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 21:52	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/04/18 21:52	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/04/18 21:52	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 21:52	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 21:52	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/04/18 21:52	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 21:52	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 21:52	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 21:52	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/04/18 21:52	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 21:52	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/04/18 21:52	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/04/18 21:52	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/04/18 21:52	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/04/18 21:52	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/04/18 21:52	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/04/18 21:52	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/04/18 21:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/04/18 21:52	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/04/18 21:52	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/04/18 21:52	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/04/18 21:52	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/04/18 21:52	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/04/18 21:52	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/04/18 21:52	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/04/18 21:52	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/04/18 21:52	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/04/18 21:52	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/04/18 21:52	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/04/18 21:52	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 21:52	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/04/18 21:52	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/04/18 21:52	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/04/18 21:52	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/04/18 21:52	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Sample: TB-092718 **Lab ID: 10449493008** Collected: 09/27/18 09:00 Received: 09/28/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/04/18 21:52	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/04/18 21:52	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/04/18 21:52	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/04/18 21:52	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/04/18 21:52	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/04/18 21:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/04/18 21:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/04/18 21:52	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/04/18 21:52	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/04/18 21:52	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/04/18 21:52	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/04/18 21:52	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/04/18 21:52	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/04/18 21:52	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/04/18 21:52	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/04/18 21:52	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/04/18 21:52	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/04/18 21:52	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/04/18 21:52	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/04/18 21:52	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/04/18 21:52	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/04/18 21:52	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/04/18 21:52	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/04/18 21:52	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/04/18 21:52	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/04/18 21:52	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 21:52	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 21:52	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/04/18 21:52	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/04/18 21:52	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/04/18 21:52	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/04/18 21:52	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/04/18 21:52	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/04/18 21:52	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		10/04/18 21:52	17060-07-0	HS
Toluene-d8 (S)	103	%.	75-125		1		10/04/18 21:52	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		10/04/18 21:52	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

QC Batch: 567352 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449493001, 10449493002, 10449493003, 10449493004, 10449493005, 10449493006, 10449493007, 10449493008

METHOD BLANK: 3078682 Matrix: Water
Associated Lab Samples: 10449493001, 10449493002, 10449493003, 10449493004, 10449493005, 10449493006, 10449493007, 10449493008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/04/18 21:04	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/04/18 21:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/04/18 21:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/04/18 21:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/04/18 21:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/04/18 21:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/04/18 21:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/04/18 21:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/04/18 21:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/04/18 21:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/04/18 21:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/04/18 21:04	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/04/18 21:04	
Acetone	ug/L	<9.2	20.0	9.2	10/04/18 21:04	
Acrolein	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/04/18 21:04	
Benzene	ug/L	<0.10	0.50	0.10	10/04/18 21:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/04/18 21:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/04/18 21:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/04/18 21:04	
Bromoform	ug/L	<0.80	4.0	0.80	10/04/18 21:04	
Bromomethane	ug/L	<1.8	4.0	1.8	10/04/18 21:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/04/18 21:04	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

METHOD BLANK: 3078682 Matrix: Water

Associated Lab Samples: 10449493001, 10449493002, 10449493003, 10449493004, 10449493005, 10449493006, 10449493007, 10449493008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/04/18 21:04	
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Chloroethane	ug/L	<0.49	1.0	0.49	10/04/18 21:04	
Chloroform	ug/L	<0.45	1.0	0.45	10/04/18 21:04	
Chloromethane	ug/L	<0.16	4.0	0.16	10/04/18 21:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/04/18 21:04	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/04/18 21:04	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/04/18 21:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/04/18 21:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/04/18 21:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/04/18 21:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/04/18 21:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/04/18 21:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/04/18 21:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/04/18 21:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/04/18 21:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/04/18 21:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/04/18 21:04	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/04/18 21:04	
Naphthalene	ug/L	<0.48	1.0	0.48	10/04/18 21:04	
o-Xylene	ug/L	<0.16	1.0	0.16	10/04/18 21:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Styrene	ug/L	<0.19	1.0	0.19	10/04/18 21:04	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/04/18 21:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/04/18 21:04	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/04/18 21:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/04/18 21:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/04/18 21:04	
Toluene	ug/L	<0.083	0.50	0.083	10/04/18 21:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/04/18 21:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/04/18 21:04	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/04/18 21:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/04/18 21:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/04/18 21:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/04/18 21:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/04/18 21:04	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/04/18 21:04	
1,2-Dichloroethane-d4 (S)	%.	100	75-125		10/04/18 21:04	
4-Bromofluorobenzene (S)	%.	100	75-125		10/04/18 21:04	
Toluene-d8 (S)	%.	104	75-125		10/04/18 21:04	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,1-Trichloroethane	ug/L	10	9.3	93	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichloroethane	ug/L	10	9.6	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.6	96	72-125	
1,1-Dichloroethane	ug/L	10	9.7	97	75-125	
1,1-Dichloroethene	ug/L	10	9.6	96	73-125	
1,1-Dichloropropene	ug/L	10	9.5	95	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.0	90	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.6	86	75-125	
1,2,4-Trimethylbenzene	ug/L	10	9.0	90	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	22.4	90	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.8	88	75-125	
1,2-Dichlorobenzene	ug/L	10	9.5	95	75-125	
1,2-Dichloroethane	ug/L	10	9.1	91	75-125	
1,2-Dichloroethene (Total)	ug/L	20	18.4	92	75-125	N2
1,2-Dichloropropane	ug/L	10	9.9	99	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.7	87	75-125	
1,3-Dichlorobenzene	ug/L	10	10	100	75-125	
1,3-Dichloropropane	ug/L	10	9.4	94	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	176J	88	75-125	
2,2,4-Trimethylpentane	ug/L	10	9.4	94	64-130	N2
2,2-Dichloropropane	ug/L	10	9.7	97	68-129	
2-Butanone (MEK)	ug/L	50	47.6	95	65-126	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
2-Hexanone	ug/L	50	46.0	92	75-134	
4-Chlorotoluene	ug/L	10	9.4	94	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	48.3	97	68-150	
Acrolein	ug/L	100	85.1	85	63-149	
Acrylonitrile	ug/L	101	93.7	93	75-125	
Benzene	ug/L	10	9.2	92	75-125	
Bromobenzene	ug/L	10	9.6	96	75-125	
Bromochloromethane	ug/L	10	9.3	93	75-125	
Bromodichloromethane	ug/L	10	9.2	92	75-125	
Bromoform	ug/L	10	9.7	97	70-125	
Bromomethane	ug/L	10	9.9	99	30-145	
Carbon disulfide	ug/L	10	7.1	71	67-125	
Carbon tetrachloride	ug/L	10	10.4	104	75-125	
Chlorobenzene	ug/L	10	9.5	95	75-125	
Chloroethane	ug/L	10	10.6	106	73-131	
Chloroform	ug/L	10	8.6	86	75-125	
Chloromethane	ug/L	10	10.5	105	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.8	88	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

LABORATORY CONTROL SAMPLE: 3078683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	9.7	97	75-125	
Dibromomethane	ug/L	10	9.4	94	75-125	
Dichlorodifluoromethane	ug/L	10	10	100	64-127	
Dichlorofluoromethane	ug/L	10	10.0	100	75-125	N2
Diisopropyl ether	ug/L	10	8.7	87	75-125	
Ethyl-tert-butyl ether	ug/L	10	8.9	89	75-125	
Ethylbenzene	ug/L	10	9.5	95	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.5	105	75-130	
Isopropylbenzene (Cumene)	ug/L	10	9.0	90	75-125	
m&p-Xylene	ug/L	20	18.1	91	75-125	
Methyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Methylene Chloride	ug/L	10	8.5	85	72-125	
n-Butylbenzene	ug/L	10	9.0	90	75-125	
n-Propylbenzene	ug/L	10	9.0	90	75-125	
Naphthalene	ug/L	10	8.2	82	61-136	
o-Xylene	ug/L	10	9.0	90	75-125	
p-Isopropyltoluene	ug/L	10	9.5	95	75-125	
sec-Butylbenzene	ug/L	10	9.3	93	75-125	
Styrene	ug/L	10	8.6	86	75-125	
tert-Amylmethyl ether	ug/L	10	8.8	88	75-125	
tert-Butyl Alcohol	ug/L	100	92.7	93	75-125	
tert-Butylbenzene	ug/L	10	9.0	90	75-125	
Tetrachloroethene	ug/L	10	10.3	103	75-125	
Tetrahydrofuran	ug/L	100	91.6	92	64-150	
Toluene	ug/L	10	8.5	85	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.1	91	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.2	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	21.9	87	57-126	
Trichloroethene	ug/L	10	9.9	99	75-125	
Trichlorofluoromethane	ug/L	10	10.5	105	74-126	
Vinyl acetate	ug/L	10	8.4J	84	72-129	
Vinyl chloride	ug/L	10	10.6	106	71-130	
Xylene (Total)	ug/L	30	27.2	91	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.2	19.4	101	97	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.2	20.5	106	102	75-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.2	18.8	96	94	75-125	2	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.0	20.0	100	100	75-125	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.4	20.1	107	101	75-136	6	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.9	20.9	110	105	75-125	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	23.2	22.2	116	111	75-127	4	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.9	20.5	104	103	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.2	18.9	96	94	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	18.3	18.4	91	92	75-125	1	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	19.2	18.9	96	95	69-131	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.8	19.4	99	97	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	44.0	45.4	88	91	61-127	3	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.3	17.8	91	89	75-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	20.2	101	101	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.6	18.0	93	90	69-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.1	40.5	105	101	75-125	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.1	20.7	105	103	75-125	2	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	19.9	19.5	100	98	75-125	2	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.5	20.9	107	104	75-125	3	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.8	19.7	99	99	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.2	20.1	101	100	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	375	348	94	87	67-128	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.0	19.3	100	96	65-150	3	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.0	21.5	110	107	65-136	2	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.3	89.2	84	89	59-125	6	30	
2-Chlorotoluene	ug/L	<0.16	20	20	23.2	22.3	116	111	73-126	4	30	
2-Hexanone	ug/L	<0.88	100	100	91.4	94.5	91	95	68-138	3	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.9	19.5	100	97	75-125	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.5	89.9	87	90	73-125	3	30	
Acetone	ug/L	<9.2	100	100	99.6	93.1	100	93	75-150	7	30	
Acrolein	ug/L	<1.2	200	200	176	176	88	88	53-150	0	30	
Acrylonitrile	ug/L	<0.91	202	202	183	185	90	92	69-127	1	30	
Benzene	ug/L	<0.10	20	20	20.8	19.9	104	100	74-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	20.6	20.2	103	101	75-125	2	30	
Bromochloromethane	ug/L	<0.27	20	20	20.0	19.3	100	96	75-125	4	30	
Bromodichloromethane	ug/L	<0.22	20	20	20.3	19.7	101	98	75-125	3	30	
Bromoform	ug/L	<0.80	20	20	19.6	18.7	98	94	68-125	5	30	
Bromomethane	ug/L	<1.8	20	20	17.9	20.8	90	104	37-149	15	30	
Carbon disulfide	ug/L	<0.078	20	20	17.5	16.8	88	84	66-139	4	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.7	20.3	104	102	75-127	2	30	
Chlorobenzene	ug/L	<0.17	20	20	20.4	19.9	102	100	75-125	2	30	
Chloroethane	ug/L	<0.49	20	20	19.4	22.3	97	112	73-134	14	30	
Chloroform	ug/L	<0.45	20	20	19.3	18.8	96	94	71-125	3	30	
Chloromethane	ug/L	<0.16	20	20	18.8	22.2	94	111	58-133	17	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.9	20.2	104	101	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	18.3	17.8	92	89	71-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	20.1	19.6	100	98	75-125	3	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3078684 3078685

Parameter	Units	10449447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	19.3	18.9	96	95	75-125	2	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.2	20.9	91	105	70-150	14	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	18.1	21.0	90	105	75-126	15	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	18.6	18.8	93	94	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.1	18.3	90	92	74-125	1	30	
Ethylbenzene	ug/L	<0.14	20	20	22.1	21.1	110	106	75-125	5	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.7	22.8	118	114	60-150	4	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.8	20.3	104	101	75-125	3	30	
m&p-Xylene	ug/L	<0.31	40	40	41.3	39.8	103	100	75-125	4	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.8	18.8	94	94	75-125	0	30	
Methylene Chloride	ug/L	<0.98	20	20	18.2	17.8	90	88	72-125	2	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.4	20.8	107	104	73-140	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.7	19.9	103	99	75-126	4	30	
Naphthalene	ug/L	<0.48	20	20	17.3	17.7	87	89	61-136	2	30	
o-Xylene	ug/L	<0.16	20	20	19.9	19.2	100	96	75-125	4	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.2	20.5	106	103	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.4	20.5	107	102	75-132	5	30	
Styrene	ug/L	<0.19	20	20	19.3	18.7	97	94	71-125	3	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	17.8	87	89	71-125	3	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	200	199	100	100	72-130	0	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.7	19.9	103	100	75-126	4	30	
Tetrachloroethene	ug/L	<0.17	20	20	23.3	22.6	116	113	75-125	3	30	
Tetrahydrofuran	ug/L	<2.2	200	200	194	186	97	93	75-150	4	30	
Toluene	ug/L	<0.083	20	20	19.4	19.3	97	96	74-125	0	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.2	20.2	106	101	75-125	4	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.1	18.9	96	94	70-125	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	46.1	45.4	92	91	57-125	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.7	19.2	98	96	75-125	2	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.2	22.0	96	110	75-135	13	30	
Vinyl acetate	ug/L	<1.1	20	20	17.8	18.0	89	90	57-136	1	30	
Vinyl chloride	ug/L	<0.092	20	20	20.0	23.1	100	115	74-141	15	30	
Xylene (Total)	ug/L	<0.31	60	60	61.3	59.0	102	98	75-125	4	30	
1,2-Dichloroethane-d4 (S)	%.						98	99	75-125			HS
4-Bromofluorobenzene (S)	%.						101	100	75-125			
Toluene-d8 (S)	%.						97	96	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449493

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449493001	**MW3D-GW-092718**	EPA 8260B	567352		
10449493002	**MW9D-GW-092718**	EPA 8260B	567352		
10449493003	**MW9U-GW-092718**	EPA 8260B	567352		
10449493004	**MW2D-GW-092718**	EPA 8260B	567352		
10449493005	**MW1D-GW-092718**	EPA 8260B	567352		
10449493006	**FD4-092718**	EPA 8260B	567352		
10449493007	**FD5-092718**	EPA 8260B	567352		
10449493008	**TB-092718**	EPA 8260B	567352		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Reques[t]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO# : 10449493

10449493

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency
State / Location
WA / Freeman

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE 2018	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	MW3d-GW-092718	WT	G	9/27	915	–	–	–	3				X				X												001
2	MW9d-GW-092718				1000	–	–	–	3				X				X												002
3	MW9u-GW-092718				1045	–	–	–	3				X				X												003
4	MW2d-GW-092718				1145	–	–	–	3				X				X												004
5	MW1d-GW-092718				1245	–	–	–	3				X				X												005
6	FD4-092718				700	–	–	–	3				X				X												006
7	FD5-092718				730	–	–	–	3				X				X												007
8	FB-092718				900	–	–	–	2				X				X												008
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	9/27/18	1000	[signature] Pace	9/28/18	1000	0.6	Y	Y	Y
*Field filtered by client							4.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/27/18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill - UPRR

Project #: WO#: 10449493

PM: JMG Due Date: 10/05/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4667/4678

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 0.4, 4.2 **Cooler Temp Corrected (°C):** 0.6, 4.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** AF 9/28/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. No ms/msd provided
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. See exceptions
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. Only 2 TB's provided
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.
10/01/18 Brad - notified of headspace in vials.
10/05/18 Lindsey - FB should be TB for -008.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1340	Temp: 04.4.2	Corrected Temp: 0.6, 4.4
Time: 1406	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 10/01/18

Note: Whenever there is a discrepancy affecting North Carolina complia[nce with North Carolina requirements, thi]s form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LABELED BY: AS

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

X 9/28/18

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
MW3~~D~~d-GW-092718	1	2	0	3
MW9d-GW- "	3	0	0	3
MW9u-GW- "	3	0	0	3
MW2d-GW- "	0	1	2	3
MW1d-GW- "	2	1	0	3
FD4-092718	2	1	0	3
FD5- "	0	3	0	3
FB- "	2	0	0	2

Pace Analytical Services, LLC
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October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449904

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449904001	**Silva-GW-092818**	Water	09/28/18 09:00	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449904001	**Silva-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449904001	**Silva-GW-092818**					
EPA 8260B	Carbon tetrachloride	1.3	ug/L	0.50	10/09/18 14:05	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Silva-GW-092818 (Lab ID: 10449904001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Silva-GW-092818 (Lab ID: 10449904001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Sample: Silva-GW-092818 **Lab ID: 10449904001** Collected: 09/28/18 09:00 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 14:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 14:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 14:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 14:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 14:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:05	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 14:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 14:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 14:05	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 14:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 14:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 14:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 14:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 14:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 14:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 14:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 14:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 14:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 14:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 14:05	75-15-0	L2
Carbon tetrachloride	**1.3**	ug/L	0.50	0.19	1		10/09/18 14:05	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 14:05	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 14:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 14:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Sample: Silva-GW-092818 **Lab ID: 10449904001** Collected: 09/28/18 09:00 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 14:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 14:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 14:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 14:05	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 14:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 14:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 14:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 14:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 14:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 14:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 14:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 14:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 14:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 14:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 14:05	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 14:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 14:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1		10/09/18 14:05	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		10/09/18 14:05	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		10/09/18 14:05	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449904001

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449904001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449904001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449904001	**Silva-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A — Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B — Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C — Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Silva-GW-092818	WT	G	9/28/18	900	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449904

10449904

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] / Pace	10/2/18	1000	3.7/2.0	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9/28/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449904

PM: JMG **Due Date: 10/09/18**

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4754 7726

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10/2/18 EV

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not assigned
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. See Exceptions Sheet
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Ochsner Date/Time: 6/27/18

Comments/Resolution:

WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: JMaglietti **Date:** 10/3/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Labeled by EV

Pace Analytical®	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
sitra-Gw-092818	1	2	0	3

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449905

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449905001	**Stark-GW-092818**	Water	09/28/18 12:15	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449905001	**Stark-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Stark-GW-092818 (Lab ID: 10449905001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Stark-GW-092818 (Lab ID: 10449905001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Sample: Stark-GW-092818 **Lab ID: 10449905001** Collected: 09/28/18 12:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 14:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 14:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 14:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 14:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 14:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:29	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 14:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 14:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 14:29	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 14:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 14:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 14:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 14:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 14:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 14:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 14:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 14:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 14:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 14:29	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 14:29	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 14:29	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 14:29	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 14:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 14:29	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Sample: Stark-GW-092818 **Lab ID: 10449905001** Collected: 09/28/18 12:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 14:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 14:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 14:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 14:29	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 14:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 14:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 14:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 14:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 14:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 14:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 14:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 14:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 14:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 14:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 14:29	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 14:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 14:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1		10/09/18 14:29	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/09/18 14:29	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/09/18 14:29	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449905001

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449905001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449905001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449905

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449905001	**Stark-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

Requested Analysis Filtered (Y/N)

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Stark-GW-092818	WT	G	9/28/18	1215	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449905

10449905

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	10:00	3.1 / 2.0	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449905

PM: JMG **Due Date: 10/09/18**

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4754 7226

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10/2/18 EV

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not ms/msd
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Ochsner Date/Time: 6/27/18

Comments/Resolution: WA certs not required for 2,2,-4-TMP and dichlorofluoromethane

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: [signature] **Date:** 10/3/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

labeled by EV

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449906

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449906001	**Marlow-GW-092818**	Water	09/28/18 13:15	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449906001	**Marlow-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449906001	**Marlow-GW-092818**					
EPA 8260B	Carbon tetrachloride	167	ug/L	10.0	10/09/18 15:17	HS
EPA 8260B	Chloroform	9.7	ug/L	1.0	10/09/18 13:17	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Marlow-GW-092818 (Lab ID: 10449906001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Marlow-GW-092818 (Lab ID: 10449906001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Sample: Marlow-GW-092818 **Lab ID: 10449906001** Collected: 09/28/18 13:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 13:17	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 13:17	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:17	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 13:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 13:17	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:17	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:17	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:17	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 13:17	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 13:17	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:17	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:17	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 13:17	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 13:17	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 13:17	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 13:17	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 13:17	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 13:17	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 13:17	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:17	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 13:17	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:17	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 13:17	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 13:17	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 13:17	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 13:17	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:17	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 13:17	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 13:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 13:17	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 13:17	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 13:17	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 13:17	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 13:17	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 13:17	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 13:17	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 13:17	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 13:17	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 13:17	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 13:17	75-15-0	L2
Carbon tetrachloride	**167**	ug/L	10.0	3.8	20		10/09/18 15:17	56-23-5	HS
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:17	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 13:17	75-00-3	
Chloroform	**9.7**	ug/L	1.0	0.45	1		10/09/18 13:17	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 13:17	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 13:17	124-48-1	

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(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Sample: Marlow-GW-092818 **Lab ID: 10449906001** Collected: 09/28/18 13:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 13:17	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 13:17	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 13:17	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 13:17	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 13:17	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 13:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 13:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 13:17	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:17	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 13:17	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 13:17	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 13:17	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:17	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 13:17	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 13:17	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 13:17	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 13:17	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 13:17	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 13:17	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 13:17	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 13:17	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:17	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 13:17	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 13:17	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 13:17	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 13:17	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:17	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:17	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 13:17	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 13:17	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:17	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 13:17	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 13:17	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 13:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		10/09/18 13:17	17060-07-0	HS
Toluene-d8 (S)	105	%.	75-125		1		10/09/18 13:17	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/09/18 13:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

QC Batch: 568084 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449906001

METHOD BLANK: 3082773 | Matrix: Water
Associated Lab Samples: 10449906001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449906001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449906

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449906

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449906001	**Marlow-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Marlow-GW-092818	WT	G	9/28/18	1315	–	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449906

10449906

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-12-18	1000	5.7 / 1.8	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#:10449906

PM: JMG Due Date: 10/09/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4754 7226

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 Cooler Temp Corrected (°C): 3.7, 2.0 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.2 Date and Initials of Person Examining Contents: 10/2/18 EV

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not received
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS. Per method, VOA pH is checked after analysis	JMG 10/03/18 ☒ Yes	☐ No	~~☒ N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution:

WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

10/03/18 Notifed client on headspace.

10/03/18

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp:
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

taken by EV

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Marlow - GW - 092018	3	0	0	3

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449908

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449908001	**Asher-GW-092818**	Water	09/28/18 09:30	10/02/18 10:00

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449908001	**Asher-GW-092818**	EPA 8260B	AEZ	83	PASI-M

PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- Asher-GW-092818 (Lab ID: 10449908001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- Asher-GW-092818 (Lab ID: 10449908001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Sample: Asher-GW-092818 **Lab ID: 10449908001** Collected: 09/28/18 09:30 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 14:53	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:53	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 14:53	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:53	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:53	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:53	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 14:53	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 14:53	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:53	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 14:53	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:53	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:53	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:53	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:53	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:53	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:53	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:53	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 14:53	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:53	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 14:53	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 14:53	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 14:53	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 14:53	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:53	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 14:53	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 14:53	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 14:53	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:53	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 14:53	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 14:53	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 14:53	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 14:53	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 14:53	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 14:53	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 14:53	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 14:53	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 14:53	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:53	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 14:53	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 14:53	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 14:53	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 14:53	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Sample: Asher-GW-092818 **Lab ID: 10449908001** Collected: 09/28/18 09:30 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:53	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 14:53	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 14:53	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 14:53	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 14:53	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 14:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 14:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:53	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 14:53	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 14:53	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 14:53	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 14:53	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 14:53	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 14:53	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 14:53	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 14:53	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 14:53	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 14:53	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 14:53	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 14:53	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 14:53	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 14:53	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 14:53	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 14:53	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 14:53	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 14:53	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:53	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:53	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 14:53	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 14:53	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 14:53	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 14:53	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 14:53	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 14:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1		10/09/18 14:53	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/09/18 14:53	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/09/18 14:53	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449908001

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449908001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449908001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449908

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449908001	**Asher-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500
	Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Asher-GW-092818	WT	G	9/28/18	930	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449908

10449908

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	10:00	3.1 2.3 FE 10.2.18	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO# : 10449908

PM: JMG **Due Date:** 10/09/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4715 4726

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and initials of Person Examining Contents:** 10/2/18 EV

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not received
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	JMG 10/03/18 ☒ Yes EV 10-2-18	☐ No	~~☒ N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	~~☒ Yes~~	☒ No	☐ N/A	14. See exception
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution:

WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina complian[ce] ... [for]m will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

labeled by EV

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Asher-GW-092818	0	3	0	3

Pace Analytical Services, LLC
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October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10449909

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449909001	**Reed-GW-092818**	Water	09/28/18 14:45	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449909001	**Reed-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- Reed-GW-092818 (Lab ID: 10449909001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Reed-GW-092818 (Lab ID: 10449909001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Sample: Reed-GW-092818 **Lab ID: 10449909001** Collected: 09/28/18 14:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 16:05	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 16:05	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:05	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 16:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 16:05	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:05	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:05	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:05	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 16:05	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 16:05	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:05	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:05	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 16:05	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 16:05	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 16:05	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 16:05	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 16:05	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 16:05	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 16:05	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:05	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 16:05	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:05	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 16:05	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 16:05	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 16:05	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 16:05	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:05	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 16:05	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 16:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 16:05	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 16:05	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 16:05	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 16:05	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 16:05	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 16:05	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 16:05	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 16:05	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 16:05	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 16:05	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 16:05	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 16:05	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:05	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 16:05	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 16:05	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 16:05	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 16:05	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Sample: Reed-GW-092818 **Lab ID: 10449909001** Collected: 09/28/18 14:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 16:05	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 16:05	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 16:05	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 16:05	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 16:05	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 16:05	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 16:05	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 16:05	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:05	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 16:05	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 16:05	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 16:05	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:05	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 16:05	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 16:05	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 16:05	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 16:05	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 16:05	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 16:05	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 16:05	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 16:05	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:05	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 16:05	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 16:05	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 16:05	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 16:05	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:05	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:05	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 16:05	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 16:05	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:05	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 16:05	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 16:05	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 16:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%.	75-125		1		10/09/18 16:05	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/09/18 16:05	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/09/18 16:05	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449909001

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449909001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449909001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449909

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449909

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449909001	**Reed-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Reed-GW-092818	WT	G	9/28/18	1445	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO# : 10449909

10449909

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	1000	3.5 1.8	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449909
PM: JMG Due Date: 10/09/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9641 4754 7726

Custody Seal on Cooler/Box Present? ☒Yes ☐No Seals Intact? ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other: Temp Blank? ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 3.5, 1.8 Cooler Temp Corrected (°C): 3.7, 2.0 Biological Tissue Frozen? ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C Correction Factor: +0.2 Date and Initials of Person Examining Contents: 10/4/18 EJ

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8. not ms/msd
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis JMG 10/03/18	☒Yes	☐No	~~☒N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14. See exception
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐Yes ☐No

Person Contacted: ark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina compli[ance samples, a copy of t]his form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

labeled by EJ

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Reed-GW-092818	0	1	2	3

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October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449910

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449910001	**Randall-GW-092818**	Water	09/28/18 13:45	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449910001	**Randall-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449910001	**Randall-GW-092818**					
EPA 8260B	Carbon tetrachloride	207	ug/L	10.0	10/09/18 15:41	HS
EPA 8260B	Chloroform	8.9	ug/L	1.0	10/09/18 13:41	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Randall-GW-092818 (Lab ID: 10449910001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Randall-GW-092818 (Lab ID: 10449910001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Sample: Randall-GW-092818 **Lab ID: 10449910001** Collected: 09/28/18 13:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 13:41	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 13:41	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:41	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 13:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 13:41	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:41	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:41	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:41	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 13:41	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 13:41	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:41	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:41	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 13:41	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 13:41	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 13:41	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 13:41	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 13:41	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 13:41	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 13:41	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:41	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 13:41	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:41	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 13:41	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 13:41	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 13:41	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 13:41	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:41	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 13:41	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 13:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 13:41	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 13:41	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 13:41	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 13:41	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 13:41	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 13:41	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 13:41	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 13:41	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 13:41	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 13:41	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 13:41	75-15-0	L2
Carbon tetrachloride	**207**	ug/L	10.0	3.8	20		10/09/18 15:41	56-23-5	HS
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:41	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 13:41	75-00-3	
Chloroform	**8.9**	ug/L	1.0	0.45	1		10/09/18 13:41	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 13:41	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 13:41	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Sample: Randall-GW-092818 **Lab ID: 10449910001** Collected: 09/28/18 13:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 13:41	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 13:41	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 13:41	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 13:41	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 13:41	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 13:41	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 13:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 13:41	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 13:41	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 13:41	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 13:41	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 13:41	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 13:41	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 13:41	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 13:41	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 13:41	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 13:41	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 13:41	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 13:41	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 13:41	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 13:41	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 13:41	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 13:41	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 13:41	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 13:41	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 13:41	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:41	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:41	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 13:41	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 13:41	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 13:41	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 13:41	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 13:41	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 13:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1		10/09/18 13:41	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		10/09/18 13:41	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/09/18 13:41	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449910001

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449910001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449910001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449910

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449910

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449910001	**Randall-GW-092818**	EPA 8260B	568084		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Randall-GW-092818	WT	G	9/28/18	1345	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449910

10449910

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10.2.18	1000	3.7 / 1.8	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO# : 10449910

PM: JMG Due Date: 10/09/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4765 4726

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10/2/18 EV

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not assigned
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation?	☐ Yes	☐ No	☒ N/A	Sample #
(HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☒ Yes	☐ No	JMG 10/03/18 ~~☒ N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14. See exceptions
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ark Date/Time: 06/27/18

Comments/Resolution:

WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina complianc[e] ... [fo]rm will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

labeled by EV

Pace Analytical®	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Randall – GW – 092818	1	2	0	3

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical Services, LLC
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449912

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449912001	**Lang-GW-092818**	Water	09/28/18 12:45	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449912001	**Lang-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Lang-GW-092818 (Lab ID: 10449912001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- Lang-GW-092818 (Lab ID: 10449912001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Sample: Lang-GW-092818 **Lab ID: 10449912001** Collected: 09/28/18 12:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 16:29	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 16:29	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:29	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 16:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 16:29	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:29	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:29	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:29	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 16:29	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 16:29	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:29	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:29	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 16:29	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 16:29	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 16:29	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 16:29	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 16:29	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 16:29	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 16:29	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:29	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 16:29	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:29	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 16:29	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 16:29	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 16:29	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 16:29	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:29	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 16:29	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 16:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 16:29	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 16:29	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 16:29	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 16:29	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 16:29	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 16:29	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 16:29	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 16:29	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 16:29	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 16:29	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 16:29	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 16:29	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:29	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 16:29	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 16:29	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 16:29	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 16:29	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Sample: Lang-GW-092818 **Lab ID: 10449912001** Collected: 09/28/18 12:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 16:29	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 16:29	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 16:29	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 16:29	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 16:29	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 16:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 16:29	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 16:29	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 16:29	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 16:29	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 16:29	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 16:29	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 16:29	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 16:29	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 16:29	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 16:29	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 16:29	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 16:29	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 16:29	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 16:29	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 16:29	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 16:29	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 16:29	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 16:29	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 16:29	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 16:29	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:29	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:29	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 16:29	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 16:29	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 16:29	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 16:29	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 16:29	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 16:29	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1		10/09/18 16:29	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		10/09/18 16:29	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/09/18 16:29	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

QC Batch: 568084 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449912001

METHOD BLANK: 3082773 | Matrix: Water
Associated Lab Samples: 10449912001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449912001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449912

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449912

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449912001	**Lang-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency	
State / Location	WA / Freeman

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Lang-GW-092818	WT	G	9/28/18	1245	–	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO# : 10449912

10449912

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	10:00	3.7 / 1.8	Y	Y	~~Y~~ N
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449912
PM: JMG Due Date: 10/09/18
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 7475 9641 4954726

Custody Seal on Cooler/Box Present? ☒Yes ☐No Seals Intact? ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other: Temp Blank? ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842 Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 3.5, 1.8 Cooler Temp Corrected (°C): 3.7, 2.0 Biological Tissue Frozen? ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C Correction Factor: +0.2 Date and Initials of Person Examining Contents: 10/2/18 EJ

USDA Regulated Soil (☒N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8. not needed
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10. 1/3 VOA arrived broken
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO₃ ☐H₂SO₄ ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	JMG 10/03/18 ☒Yes	☐No	~~☒N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☒No	☐N/A	14. See exceptions
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐Yes ☐No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

labeled by bv

Pace Analytical®	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Lang - GW - 092818	0	~~1~~ 0	~~2~~ 2	~~3~~ 2 RW 10/2/18

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449913001	**FreemanPrimary-GW-100118**	Water	10/01/18 09:15	10/02/18 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449913001	**FreemanPrimary-GW-100118**	EPA 8260B	AEZ	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10449913001	**FreemanPrimary-GW-100118**					
EPA 8260B	Carbon tetrachloride	6.8	ug/L	0.50	10/09/18 17:17	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- FreemanPrimary-GW-100118 (Lab ID: 10449913001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- FreemanPrimary-GW-100118 (Lab ID: 10449913001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Sample: FreemanPrimary-GW-100118 **Lab ID: 10449913001** Collected: 10/01/18 09:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 17:17	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 17:17	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:17	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 17:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 17:17	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:17	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:17	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:17	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 17:17	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 17:17	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:17	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:17	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 17:17	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 17:17	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 17:17	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 17:17	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 17:17	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 17:17	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 17:17	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:17	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 17:17	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:17	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 17:17	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 17:17	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 17:17	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 17:17	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:17	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 17:17	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 17:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 17:17	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 17:17	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 17:17	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 17:17	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 17:17	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 17:17	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 17:17	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 17:17	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 17:17	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 17:17	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 17:17	75-15-0	L2
Carbon tetrachloride	**6.8**	ug/L	0.50	0.19	1		10/09/18 17:17	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:17	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 17:17	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 17:17	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 17:17	74-87-3	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Sample: FreemanPrimary-GW-100118 **Lab ID: 10449913001** Collected: 10/01/18 09:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 17:17	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 17:17	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 17:17	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 17:17	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 17:17	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 17:17	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 17:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 17:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 17:17	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:17	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 17:17	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 17:17	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 17:17	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:17	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 17:17	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 17:17	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 17:17	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 17:17	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 17:17	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 17:17	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 17:17	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 17:17	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:17	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 17:17	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 17:17	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 17:17	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 17:17	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:17	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:17	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 17:17	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 17:17	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:17	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 17:17	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 17:17	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 17:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1		10/09/18 17:17	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/09/18 17:17	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		10/09/18 17:17	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

QC Batch: 568084 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449913001

METHOD BLANK: 3082773 | Matrix: Water
Associated Lab Samples: 10449913001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449913001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10449913

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449913

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449913001	**FreemanPrimary-GW-100118**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	2320 Alkalinity	**Chloride, Sulfate, Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	MS/MSD Requested		
1	Freeman Primary-GW-100118	WT	G	10/1/18	915	—	—	—	3				X				X												001
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

WO# : 10449913

10449913

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	1000	3.7 / 1.8	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449913

PM: JMG Due Date: 10/09/18

CLIENT: UPRR_CH2M

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] SpeeDee [ ] Other: ______

Tracking Number: 7475 9641 4754 7726

Custody Seal on Cooler/Box Present? [X] Yes [ ] No Seals Intact? [X] Yes [ ] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [ ] Bubble Wrap [X] Bubble Bags [ ] None [ ] Other: ______ Temp Blank? [X] Yes [ ] No

Thermometer Used: [X] G87A9170600254 [ ] G87A9155100842

Type of Ice: [X] Wet [ ] Blue [ ] None [ ] Dry [ ] Melted

Cooler Temp Read (°C): 3.5, 1.8 Cooler Temp Corrected (°C): 3.7, 2.0 Biological Tissue Frozen? [ ] Yes [ ] No [X] NA

Temp should be above freezing to 6°C Correction Factor: +0.2 Date and Initials of Person Examining Contents: 10/2/18 EJ

USDA Regulated Soil ([X] N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? [ ] Yes [ ] No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? [ ] Yes [ ] No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	[X] Yes	[ ] No		1.
Chain of Custody Filled Out?	[X] Yes	[ ] No		2.
Chain of Custody Relinquished?	[X] Yes	[ ] No		3.
Sampler Name and/or Signature on COC?	[X] Yes	[ ] No	[ ] N/A	4.
Samples Arrived within Hold Time?	[X] Yes	[ ] No		5.
Short Hold Time Analysis (<72 hr)?	[ ] Yes	[X] No		6.
Rush Turn Around Time Requested?	[ ] Yes	[X] No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	[X] Yes	[ ] No		8. not requested
Correct Containers Used?	[X] Yes	[ ] No		9.
-Pace Containers Used?	[X] Yes	[ ] No		
Containers Intact?	[X] Yes	[ ] No		10.
Filtered Volume Received for Dissolved Tests?	[ ] Yes	[ ] No	[X] N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	[X] Yes	[ ] No		12.
All containers needing acid/base preservation have been checked?	[ ] Yes	[ ] No	[X] N/A	13. [ ] HNO_3 [ ] H_2SO_4 [ ] NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	[ ] Yes	[ ] No	[X] N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	JMG 10/03/18 [X] Yes	[ ] No	~~[X] N/A~~	Initial when completed: ______ Lot # of added preservative: ______
Headspace in VOA Vials (>6mm)?	[ ] Yes	[X] No	[ ] N/A	14. See exceptions
3 Trip Blanks Present?	[ ] Yes	[X] No	[ ] N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	[X] Yes	[ ] No	[ ] N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? [ ] Yes [ ] No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution:

WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Freeman Primary-GW-100118	0	1	2	3

Pace Analytical Services, LLC
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October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449915001	**AtwoodH-GW-092818**	Water	09/28/18 10:45	10/02/18 10:00
10449915002	**AtwoodS-GW-092818**	Water	09/28/18 11:15	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449915001	**AtwoodH-GW-092818**	EPA 8260B	AEZ	83	PASI-M
10449915002	**AtwoodS-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- AtwoodH-GW-092818 (Lab ID: 10449915001)
- AtwoodS-GW-092818 (Lab ID: 10449915002)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- AtwoodH-GW-092818 (Lab ID: 10449915001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- AtwoodS-GW-092818 (Lab ID: 10449915002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- AtwoodS-GW-092818 (Lab ID: 10449915002)
  - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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1700 Elm Street - Suite 200
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(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Sample: AtwoodH-GW-092818 **Lab ID: 10449915001** Collected: 09/28/18 10:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 17:42	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 17:42	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:42	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 17:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 17:42	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:42	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:42	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:42	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 17:42	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 17:42	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:42	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:42	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 17:42	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 17:42	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 17:42	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 17:42	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 17:42	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 17:42	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 17:42	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:42	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 17:42	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:42	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 17:42	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 17:42	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 17:42	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 17:42	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:42	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 17:42	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 17:42	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 17:42	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 17:42	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 17:42	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 17:42	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 17:42	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 17:42	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 17:42	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 17:42	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 17:42	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 17:42	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 17:42	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 17:42	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:42	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 17:42	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 17:42	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 17:42	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 17:42	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Sample: AtwoodH-GW-092818 **Lab ID: 10449915001** Collected: 09/28/18 10:45 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 17:42	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 17:42	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 17:42	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 17:42	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 17:42	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 17:42	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 17:42	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 17:42	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 17:42	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 17:42	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 17:42	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 17:42	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 17:42	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 17:42	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 17:42	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 17:42	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 17:42	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 17:42	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 17:42	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 17:42	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 17:42	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 17:42	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 17:42	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 17:42	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 17:42	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 17:42	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:42	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:42	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 17:42	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 17:42	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 17:42	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 17:42	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 17:42	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 17:42	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%.	75-125		1		10/09/18 17:42	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		10/09/18 17:42	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		10/09/18 17:42	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Sample: AtwoodS-GW-092818 **Lab ID: 10449915002** Collected: 09/28/18 11:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 18:06	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 18:06	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:06	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 18:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 18:06	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:06	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:06	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:06	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 18:06	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 18:06	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:06	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:06	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 18:06	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 18:06	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 18:06	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 18:06	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 18:06	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 18:06	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 18:06	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:06	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 18:06	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:06	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 18:06	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 18:06	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 18:06	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 18:06	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:06	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 18:06	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 18:06	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 18:06	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 18:06	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 18:06	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 18:06	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 18:06	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 18:06	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 18:06	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 18:06	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 18:06	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 18:06	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 18:06	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 18:06	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:06	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 18:06	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 18:06	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 18:06	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 18:06	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Sample: AtwoodS-GW-092818 **Lab ID: 10449915002** Collected: 09/28/18 11:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 18:06	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 18:06	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 18:06	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 18:06	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 18:06	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 18:06	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 18:06	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 18:06	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:06	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 18:06	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 18:06	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 18:06	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:06	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 18:06	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 18:06	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 18:06	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 18:06	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 18:06	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 18:06	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 18:06	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 18:06	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:06	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 18:06	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 18:06	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 18:06	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 18:06	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:06	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:06	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 18:06	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 18:06	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:06	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 18:06	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 18:06	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 18:06	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%.	75-125		1		10/09/18 18:06	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		10/09/18 18:06	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/09/18 18:06	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

QC Batch: 568084 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449915001, 10449915002

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449915001, 10449915002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449915001, 10449915002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449915

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449915001	**AtwoodH-GW-092818**	EPA 8260B	568084		
10449915002	**AtwoodS-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B
Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C
Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* — Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate** 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Atwood H-GW-092818	WT	G	9/28/18	1045	–	3				X				X													001
2	Atwood S-GW-092818	↓	↓	↓	1115	–	3				X				X													002
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO#: 10449915

10449915

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	Jonathan Espinoza / Jacobs	10/1/18	1600	Pace	10-2-18	1000	1.8	Y	Y	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10449915
PM: JMG **Due Date: 10/09/18**
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4754 7726

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10/2/18 EJ

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. not assigned
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	JMG 10/03/18 ☒ Yes	☐ No	~~☒ N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. See exceptions
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Atwwd-5-GW 092818	0	2	1	3

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 10, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Lindsey Baumann, CH2M Hill
Steve Demus, CH2M Hill
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10449916001	**Thorson-GW-092818**	Water	09/28/18 10:15	10/02/18 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10449916001	**Thorson-GW-092818**	EPA 8260B	AEZ	83	PASI-M

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- Thorson-GW-092818 (Lab ID: 10449916001)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.
- BLANK (Lab ID: 3082773)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3082774)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: October 10, 2018

Analyte Comments:

QC Batch: 568084

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- MS (Lab ID: 3083358)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3083359)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Thorson-GW-092818 (Lab ID: 10449916001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Sample: Thorson-GW-092818 **Lab ID: 10449916001** Collected: 09/28/18 10:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		10/09/18 18:30	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 18:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:30	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		10/09/18 18:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		10/09/18 18:30	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:30	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:30	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:30	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		10/09/18 18:30	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		10/09/18 18:30	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:30	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:30	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		10/09/18 18:30	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	1.0	0.24	1		10/09/18 18:30	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 18:30	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 18:30	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		10/09/18 18:30	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 18:30	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 18:30	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:30	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		10/09/18 18:30	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:30	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		10/09/18 18:30	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		10/09/18 18:30	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		10/09/18 18:30	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		10/09/18 18:30	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:30	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		10/09/18 18:30	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	1.0	0.13	1		10/09/18 18:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		10/09/18 18:30	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		10/09/18 18:30	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		10/09/18 18:30	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		10/09/18 18:30	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		10/09/18 18:30	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		10/09/18 18:30	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		10/09/18 18:30	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		10/09/18 18:30	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		10/09/18 18:30	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		10/09/18 18:30	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		10/09/18 18:30	75-15-0	L2
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		10/09/18 18:30	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:30	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		10/09/18 18:30	75-00-3	
Chloroform	**<0.45**	ug/L	1.0	0.45	1		10/09/18 18:30	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		10/09/18 18:30	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/09/18 18:30	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Sample: Thorson-GW-092818 **Lab ID: 10449916001** Collected: 09/28/18 10:15 Received: 10/02/18 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		10/09/18 18:30	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		10/09/18 18:30	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		10/09/18 18:30	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		10/09/18 18:30	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		10/09/18 18:30	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		10/09/18 18:30	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		10/09/18 18:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		10/09/18 18:30	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		10/09/18 18:30	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		10/09/18 18:30	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		10/09/18 18:30	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		10/09/18 18:30	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		10/09/18 18:30	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		10/09/18 18:30	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		10/09/18 18:30	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		10/09/18 18:30	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		10/09/18 18:30	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		10/09/18 18:30	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		10/09/18 18:30	75-01-4	
Xylene (Total)	**<0.31**	ug/L	3.0	0.31	1		10/09/18 18:30	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		10/09/18 18:30	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	1.0	0.20	1		10/09/18 18:30	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	2.0	0.31	1		10/09/18 18:30	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		10/09/18 18:30	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	1.0	0.10	1		10/09/18 18:30	103-65-1	
o-Xylene	**<0.16**	ug/L	1.0	0.16	1		10/09/18 18:30	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:30	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:30	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		10/09/18 18:30	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		10/09/18 18:30	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		10/09/18 18:30	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		10/09/18 18:30	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		10/09/18 18:30	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		10/09/18 18:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1		10/09/18 18:30	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/09/18 18:30	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		10/09/18 18:30	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

QC Batch: 568084 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10449916001

METHOD BLANK: 3082773 | Matrix: Water
Associated Lab Samples: 10449916001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	10/09/18 12:05	
1,1,1-Trichloroethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	10/09/18 12:05	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	10/09/18 12:05	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	10/09/18 12:05	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	10/09/18 12:05	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	10/09/18 12:05	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	10/09/18 12:05	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	10/09/18 12:05	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	10/09/18 12:05	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	10/09/18 12:05	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	10/09/18 12:05	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
2-Hexanone	ug/L	<0.88	5.0	0.88	10/09/18 12:05	
4-Chlorotoluene	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	10/09/18 12:05	
Acetone	ug/L	<9.2	20.0	9.2	10/09/18 12:05	
Acrolein	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
Acrylonitrile	ug/L	<0.91	10.0	0.91	10/09/18 12:05	
Benzene	ug/L	<0.10	0.50	0.10	10/09/18 12:05	
Bromobenzene	ug/L	<0.21	0.50	0.21	10/09/18 12:05	
Bromochloromethane	ug/L	<0.27	1.0	0.27	10/09/18 12:05	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	10/09/18 12:05	
Bromoform	ug/L	<0.80	4.0	0.80	10/09/18 12:05	
Bromomethane	ug/L	<1.8	4.0	1.8	10/09/18 12:05	
Carbon disulfide	ug/L	<0.078	1.0	0.078	10/09/18 12:05	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

METHOD BLANK: 3082773 Matrix: Water
Associated Lab Samples: 10449916001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Chloroethane	ug/L	<0.49	1.0	0.49	10/09/18 12:05	
Chloroform	ug/L	<0.45	1.0	0.45	10/09/18 12:05	
Chloromethane	ug/L	<0.16	4.0	0.16	10/09/18 12:05	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	10/09/18 12:05	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	10/09/18 12:05	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	10/09/18 12:05	
Dibromomethane	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	10/09/18 12:05	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	10/09/18 12:05	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	10/09/18 12:05	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	10/09/18 12:05	
Ethylbenzene	ug/L	<0.14	0.50	0.14	10/09/18 12:05	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	10/09/18 12:05	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
m&p-Xylene	ug/L	<0.31	2.0	0.31	10/09/18 12:05	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	10/09/18 12:05	
Methylene Chloride	ug/L	<0.98	4.0	0.98	10/09/18 12:05	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	10/09/18 12:05	
n-Propylbenzene	ug/L	<0.10	1.0	0.10	10/09/18 12:05	
Naphthalene	ug/L	<0.48	1.0	0.48	10/09/18 12:05	
o-Xylene	ug/L	<0.16	1.0	0.16	10/09/18 12:05	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Styrene	ug/L	<0.19	1.0	0.19	10/09/18 12:05	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	10/09/18 12:05	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	10/09/18 12:05	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	10/09/18 12:05	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	10/09/18 12:05	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	10/09/18 12:05	
Toluene	ug/L	<0.083	0.50	0.083	10/09/18 12:05	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	10/09/18 12:05	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	10/09/18 12:05	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	10/09/18 12:05	
Trichloroethene	ug/L	<0.15	0.40	0.15	10/09/18 12:05	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	10/09/18 12:05	
Vinyl acetate	ug/L	<1.1	10.0	1.1	10/09/18 12:05	
Vinyl chloride	ug/L	<0.092	0.20	0.092	10/09/18 12:05	
Xylene (Total)	ug/L	<0.31	3.0	0.31	10/09/18 12:05	
1,2-Dichloroethane-d4 (S)	%.	94	75-125		10/09/18 12:05	
4-Bromofluorobenzene (S)	%.	97	75-125		10/09/18 12:05	
Toluene-d8 (S)	%.	104	75-125		10/09/18 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.5	95	75-125	
1,1,1-Trichloroethane	ug/L	10	9.4	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	75-125	
1,1,2-Trichloroethane	ug/L	10	9.9	99	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.1	91	72-125	
1,1-Dichloroethane	ug/L	10	9.0	90	75-125	
1,1-Dichloroethene	ug/L	10	9.2	92	73-125	
1,1-Dichloropropene	ug/L	10	8.7	87	73-125	
1,2,3-Trichlorobenzene	ug/L	10	9.1	91	72-130	
1,2,3-Trichloropropane	ug/L	10	9.2	92	75-125	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	75-125	
1,2,4-Trimethylbenzene	ug/L	10	8.6	86	75-125	
1,2-Dibromo-3-chloropropane	ug/L	25	23.6	94	64-133	
1,2-Dibromoethane (EDB)	ug/L	10	8.6	86	75-125	
1,2-Dichlorobenzene	ug/L	10	9.6	96	75-125	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.4	87	75-125	N2
1,2-Dichloropropane	ug/L	10	9.2	92	75-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	189J	94	75-125	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	64-130	N2
2,2-Dichloropropane	ug/L	10	9.8	98	68-129	
2-Butanone (MEK)	ug/L	50	40.6	81	65-126	
2-Chlorotoluene	ug/L	10	9.9	99	75-125	
2-Hexanone	ug/L	50	41.8	84	75-134	
4-Chlorotoluene	ug/L	10	8.8	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.5	91	75-131	
Acetone	ug/L	50	52.8	106	68-150	
Acrolein	ug/L	100	66.6	67	63-149	
Acrylonitrile	ug/L	101	88.2	87	75-125	
Benzene	ug/L	10	8.7	87	75-125	
Bromobenzene	ug/L	10	9.3	93	75-125	
Bromochloromethane	ug/L	10	9.2	92	75-125	
Bromodichloromethane	ug/L	10	9.9	99	75-125	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.0	100	30-145	
Carbon disulfide	ug/L	10	6.3	63	67-125	L2
Carbon tetrachloride	ug/L	10	10.1	101	75-125	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	10.7	107	73-131	
Chloroform	ug/L	10	8.4	84	75-125	
Chloromethane	ug/L	10	9.0	90	52-132	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	75-125	
cis-1,3-Dichloropropene	ug/L	10	8.9	89	75-125	

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

LABORATORY CONTROL SAMPLE: 3082774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.0	100	75-125	
Dibromomethane	ug/L	10	10.1	101	75-125	
Dichlorodifluoromethane	ug/L	10	9.4	94	64-127	
Dichlorofluoromethane	ug/L	10	10	100	75-125	N2
Diisopropyl ether	ug/L	10	8.2	82	75-125	
Ethyl-tert-butyl ether	ug/L	10	9.1	91	75-125	
Ethylbenzene	ug/L	10	9.2	92	75-125	
Hexachloro-1,3-butadiene	ug/L	10	10.7	107	75-130	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	17.7	88	75-125	
Methyl-tert-butyl ether	ug/L	10	9.3	93	75-125	
Methylene Chloride	ug/L	10	8.1	81	72-125	
n-Butylbenzene	ug/L	10	8.7	87	75-125	
n-Propylbenzene	ug/L	10	8.7	87	75-125	
Naphthalene	ug/L	10	7.9	79	61-136	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	9.2	92	75-125	
sec-Butylbenzene	ug/L	10	8.8	88	75-125	
Styrene	ug/L	10	8.5	85	75-125	
tert-Amylmethyl ether	ug/L	10	9.1	91	75-125	
tert-Butyl Alcohol	ug/L	100	101	101	75-125	
tert-Butylbenzene	ug/L	10	8.6	86	75-125	
Tetrachloroethene	ug/L	10	10.4	104	75-125	
Tetrahydrofuran	ug/L	100	102	102	64-150	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.2	82	75-125	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	20.6	82	57-126	
Trichloroethene	ug/L	10	9.7	97	75-125	
Trichlorofluoromethane	ug/L	10	11.0	110	74-126	
Vinyl acetate	ug/L	10	7.9J	79	72-129	
Vinyl chloride	ug/L	10	9.7	97	71-130	
Xylene (Total)	ug/L	30	26.4	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			94	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<4.9	250	250	247	246	99	98	75-125	0	30	
1,1,1-Trichloroethane	ug/L	<3.4	250	250	245	244	98	97	75-129	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<4.2	250	250	212	234	85	94	75-125	10	30	
1,1,2-Trichloroethane	ug/L	<4.5	250	250	243	245	97	98	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<5.4	250	250	243	231	97	92	75-136	5	30	
1,1-Dichloroethane	ug/L	<4.2	250	250	232	236	93	94	75-125	2	30	
1,1-Dichloroethene	ug/L	<4.0	250	250	263	247	105	99	75-127	6	30	
1,1-Dichloropropene	ug/L	<5.0	250	250	233	227	93	91	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<5.2	250	250	224	219	90	88	72-137	2	30	
1,2,3-Trichloropropane	ug/L	<6.4	250	250	224	235	90	94	75-125	5	30	
1,2,4-Trichlorobenzene	ug/L	<5.0	250	250	230	218	92	87	69-131	5	30	
1,2,4-Trimethylbenzene	ug/L	<4.9	250	250	215	212	86	85	71-125	2	30	
1,2-Dibromo-3-chloropropane	ug/L	<41.5	625	625	567	607	91	97	61-127	7	30	
1,2-Dibromoethane (EDB)	ug/L	<6.0	250	250	225	234	90	94	75-125	4	30	
1,2-Dichlorobenzene	ug/L	<3.4	250	250	241	238	96	95	75-125	1	30	
1,2-Dichloroethane	ug/L	<5.4	250	250	219	218	87	87	69-125	0	30	
1,2-Dichloroethene (Total)	ug/L	<6.8	500	500	464	466	93	93	75-125	1	30	N2
1,2-Dichloropropane	ug/L	<4.1	250	250	239	238	95	95	75-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<3.0	250	250	208	205	83	82	75-125	1	30	
1,3-Dichlorobenzene	ug/L	<4.0	250	250	250	245	100	98	75-125	2	30	
1,3-Dichloropropane	ug/L	<1.7	250	250	231	235	92	94	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<4.2	250	250	241	239	96	96	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<408	5000	5000	4430J	4970J	89	99	67-128		30	
2,2,4-Trimethylpentane	ug/L	<4.8	250	250	239	233	96	93	65-150	2	30	N2
2,2-Dichloropropane	ug/L	<4.3	250	250	256	250	102	100	65-136	2	30	
2-Butanone (MEK)	ug/L	<24.8	1250	1250	967	1020	77	82	59-125	5	30	
2-Chlorotoluene	ug/L	<4.1	250	250	254	254	102	102	73-126	0	30	
2-Hexanone	ug/L	<21.9	1250	1250	998	1040	80	83	68-138	4	30	
4-Chlorotoluene	ug/L	<3.4	250	250	226	225	91	90	75-125	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.6	1250	1250	1110	1090	89	87	73-125	2	30	
Acetone	ug/L	<231	1250	1250	1190	1280	95	103	75-150	7	30	
Acrolein	ug/L	<30.0	2500	2500	1860	2110	74	84	53-150	12	30	
Acrylonitrile	ug/L	<22.7	2520	2520	2170	2280	86	90	69-127	5	30	
Benzene	ug/L	<2.6	250	250	229	231	92	92	74-125	1	30	
Bromobenzene	ug/L	<5.2	250	250	242	237	97	95	75-125	2	30	
Bromochloromethane	ug/L	<6.8	250	250	235	238	94	95	75-125	2	30	
Bromodichloromethane	ug/L	<5.4	250	250	239	237	96	95	75-125	1	30	
Bromoform	ug/L	<20.0	250	250	261	271	104	108	68-125	4	30	
Bromomethane	ug/L	<45.5	250	250	246	252	98	101	37-149	2	30	
Carbon disulfide	ug/L	<1.9	250	250	205	201	82	80	66-139	2	30	
Carbon tetrachloride	ug/L	279	250	250	492	492	86	85	75-127	0	30	
Chlorobenzene	ug/L	<4.3	250	250	235	235	94	94	75-125	0	30	
Chloroethane	ug/L	<12.2	250	250	271	255	108	102	73-134	6	30	
Chloroform	ug/L	<11.2	250	250	227	231	91	93	71-125	2	30	
Chloromethane	ug/L	<3.9	250	250	226	218	91	87	58-133	4	30	
cis-1,2-Dichloroethene	ug/L	<3.8	250	250	228	234	91	94	75-125	3	30	
cis-1,3-Dichloropropene	ug/L	<5.1	250	250	228	228	91	91	71-125	0	30	
Dibromochloromethane	ug/L	<3.1	250	250	245	255	98	102	75-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083358 3083359

Parameter	Units	10450781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<4.1	250	250	255	256	102	102	75-125	0	30	
Dichlorodifluoromethane	ug/L	<5.8	250	250	248	248	99	99	70-150	0	30	
Dichlorofluoromethane	ug/L	<3.5	250	250	249	251	100	100	75-126	1	30	N2
Diisopropyl ether	ug/L	<3.3	250	250	212	213	85	85	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<4.4	250	250	230	239	92	95	74-125	4	30	
Ethylbenzene	ug/L	<3.4	250	250	240	238	96	95	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<7.8	250	250	270	265	108	106	60-150	2	30	
Isopropylbenzene (Cumene)	ug/L	<4.6	250	250	230	226	92	90	75-125	2	30	
m&p-Xylene	ug/L	<7.7	500	500	455	452	91	90	75-125	1	30	
Methyl-tert-butyl ether	ug/L	<4.0	250	250	232	241	93	96	75-125	4	30	
Methylene Chloride	ug/L	<24.5	250	250	208	214	79	82	72-125	3	30	
n-Butylbenzene	ug/L	<6.0	250	250	223	211	89	84	73-140	6	30	
n-Propylbenzene	ug/L	<2.5	250	250	222	219	89	88	75-126	1	30	
Naphthalene	ug/L	<12.0	250	250	198	199	79	80	61-136	0	30	
o-Xylene	ug/L	<4.0	250	250	225	222	90	89	75-125	1	30	
p-Isopropyltoluene	ug/L	<3.8	250	250	230	231	92	92	73-133	0	30	
sec-Butylbenzene	ug/L	<3.8	250	250	224	221	90	88	75-132	2	30	
Styrene	ug/L	<4.7	250	250	227	221	91	88	71-125	3	30	
tert-Amylmethyl ether	ug/L	<2.7	250	250	228	240	91	96	71-125	5	30	
tert-Butyl Alcohol	ug/L	<31.0	2500	2500	2700	2500	108	100	72-130	8	30	
tert-Butylbenzene	ug/L	<3.7	250	250	224	222	90	89	75-126	1	30	
Tetrachloroethene	ug/L	<4.2	250	250	273	265	109	106	75-125	3	30	
Tetrahydrofuran	ug/L	<55.5	2500	2500	2450	2620	98	105	75-150	7	30	
Toluene	ug/L	<2.1	250	250	230	226	92	90	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	<2.9	250	250	235	232	94	93	75-125	1	30	
trans-1,3-Dichloropropene	ug/L	<4.6	250	250	246	234	98	94	70-125	5	30	
trans-1,4-Dichloro-2-butene	ug/L	<51.0	625	625	493	501	79	80	57-125	2	30	
Trichloroethene	ug/L	<3.8	250	250	258	251	103	100	75-125	3	30	
Trichlorofluoromethane	ug/L	<5.8	250	250	264	269	106	108	75-135	2	30	
Vinyl acetate	ug/L	<27.5	250	250	205J	211J	82	84	57-136		30	
Vinyl chloride	ug/L	<2.3	250	250	257	251	103	100	74-141	2	30	
Xylene (Total)	ug/L	<7.7	750	750	680	674	91	90	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						95	96	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						98	99	75-125			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10449916

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10449916001	**Thorson-GW-092818**	EPA 8260B	568084		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500	Copy To: Steve Demus, Lindsey Baumann	Company: UPRR
Spokane, WA 99201	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: / Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: ***10 Day Standard***	Project #: 1497	Pace Profile #: ***36447 / 4***

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): 6010/7470 TAL Dissolved Metals* = Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Thorson-GW-092818	WT	G	9/28/18	1015	–	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

WO# : 10449916

10449916

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	10/1/18	1600	[signature] Pace	10-2-18	1000	3.7 / 1.4	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/28/18

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form - ESI	Document Revised: 02May2018 Page 1 of 2
	Document No.: F-MN-L-210-rev.25	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #: WO#:10449916

PM: JMG Due Date: 10/09/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9641 4754 4726

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.5, 1.8 **Cooler Temp Corrected (°C):** 3.7, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10/2/18 EJ

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒ Yes	☐ No		8. Not required
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	JMG 10/03/18 ☒ Yes	☐ No	~~☒ N/A~~	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14. See Exception
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. 2 trip Blanks
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 176525				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 2,2,4-TMP or dichlorofluoromethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1610	Temp: 3.5, 1.8	Corrected Temp: 3.7, 2.0
Time: 1630	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross Date: 10/03/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: **Headspace Exception**	Document Revised: 06Nov2017 Page 1 of 1
	Document No.: **F-MN-C-276-Rev.00**	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace > 6mm	Headspace < 6mm	No Headspace	Total Vials
Thorson-GW-092518	0	2	1	3

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December 20, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10458888

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10458888001	**SB201-S-5'**	Solid	12/13/18 12:30	12/14/18 10:05
10458888002	**SB201-S-15'**	Solid	12/13/18 12:45	12/14/18 10:05
10458888003	**SB202-S-5'**	Solid	12/13/18 11:45	12/14/18 10:05
10458888004	**SB202-S-15'**	Solid	12/13/18 12:00	12/14/18 10:05
10458888005	**SB203-S-5'**	Solid	12/13/18 11:00	12/14/18 10:05
10458888006	**SB203-S-15'**	Solid	12/13/18 11:15	12/14/18 10:05
10458888007	**SB204-S-5'**	Solid	12/13/18 10:30	12/14/18 10:05
10458888008	**SB204-S-15'**	Solid	12/13/18 10:45	12/14/18 10:05
10458888009	**SB205-S-5'**	Solid	12/13/18 09:45	12/14/18 10:05
10458888010	**SB205-S-15'**	Solid	12/13/18 10:00	12/14/18 10:05
10458888011	**SB-S-FD**	Solid	12/13/18 16:00	12/14/18 10:05
10458888012	**Trip Blank**	Solid	12/13/18 08:00	12/14/18 10:05

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SAMPLE ANALYTE COUNT

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10458888001	**SB201-S-5'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888002	**SB201-S-15'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888003	**SB202-S-5'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888004	**SB202-S-15'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888005	**SB203-S-5'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888006	**SB203-S-15'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888007	**SB204-S-5'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888008	**SB204-S-15'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888009	**SB205-S-5'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888010	**SB205-S-15'**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888011	**SB-S-FD**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10458888012	**Trip Blank**	EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10458888001	**SB201-S-5'**					
ASTM D2974	Percent Moisture	5.6	%	0.10	12/19/18 15:44	
10458888002	**SB201-S-15'**					
ASTM D2974	Percent Moisture	29.2	%	0.10	12/19/18 15:44	
EPA 8260B	Acetone	0.99J	mg/kg	1.5	12/19/18 15:19	CH
10458888003	**SB202-S-5'**					
ASTM D2974	Percent Moisture	10.3	%	0.10	12/19/18 15:45	
EPA 8260B	Toluene	0.016J	mg/kg	0.059	12/19/18 15:57	
EPA 8260B	m&p-Xylene	0.014J	mg/kg	0.12	12/19/18 15:57	B
10458888004	**SB202-S-15'**					
ASTM D2974	Percent Moisture	33.3	%	0.10	12/19/18 15:45	
EPA 8260B	Acetone	0.84J	mg/kg	1.6	12/19/18 16:16	CH
10458888005	**SB203-S-5'**					
ASTM D2974	Percent Moisture	9.6	%	0.10	12/19/18 15:45	
10458888006	**SB203-S-15'**					
ASTM D2974	Percent Moisture	36.4	%	0.10	12/19/18 15:45	
10458888007	**SB204-S-5'**					
ASTM D2974	Percent Moisture	22.8	%	0.10	12/19/18 15:45	
10458888008	**SB204-S-15'**					
ASTM D2974	Percent Moisture	35.1	%	0.10	12/19/18 15:45	
EPA 8260B	Acetone	0.91J	mg/kg	1.7	12/19/18 17:31	CH
10458888009	**SB205-S-5'**					
ASTM D2974	Percent Moisture	18.7	%	0.10	12/19/18 15:46	
10458888010	**SB205-S-15'**					
ASTM D2974	Percent Moisture	31.7	%	0.10	12/19/18 15:46	
10458888011	**SB-S-FD**					
ASTM D2974	Percent Moisture	34.7	%	0.10	12/19/18 15:46	

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: December 20, 2018

General Information:
12 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 581817

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 3153960)
  - Bromomethane
- MS (Lab ID: 3153961)
  - Bromomethane
- MSD (Lab ID: 3153962)
  - Bromomethane

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 581817

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3153960)
  - Acetone
  - Tetrahydrofuran
- MS (Lab ID: 3153961)
  - Acetone
  - Tetrahydrofuran
- MSD (Lab ID: 3153962)
  - Acetone
  - Tetrahydrofuran
- SB201-S-15' (Lab ID: 10458888002)
  - Acetone
- SB202-S-15' (Lab ID: 10458888004)
  - Acetone
- SB204-S-15' (Lab ID: 10458888008)
  - Acetone

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PROJECT NARRATIVE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: December 20, 2018

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 581817

B: Analyte was detected in the associated method blank.
- BLANK for HBN 581817 [MSV/4693 (Lab ID: 3153959)
  - m&p-Xylene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 581817

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10458888002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3153961)
  - Chloroethane
  - Tetrahydrofuran

R1: RPD value was outside control limits.
- MSD (Lab ID: 3153962)
  - Tetrahydrofuran

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB201-S-5' **Lab ID: 10458888001** Collected: 12/13/18 12:30 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**5.6**	%	0.10	0.10	1		12/19/18 15:44		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.063	0.029	1	12/19/18 11:50	12/19/18 15:38	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.25	0.011	1	12/19/18 11:50	12/19/18 15:38	79-34-5	
1,1,2-Trichloroethane	**<0.0075**	mg/kg	0.063	0.0075	1	12/19/18 11:50	12/19/18 15:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.073**	mg/kg	0.63	0.073	1	12/19/18 11:50	12/19/18 15:38	76-13-1	
1,1-Dichloroethane	**<0.0071**	mg/kg	0.063	0.0071	1	12/19/18 11:50	12/19/18 15:38	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.63	0.019	1	12/19/18 11:50	12/19/18 15:38	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.063	0.014	1	12/19/18 11:50	12/19/18 15:38	120-82-1	
1,2,4-Trimethylbenzene	**<0.013**	mg/kg	0.063	0.013	1	12/19/18 11:50	12/19/18 15:38	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0066**	mg/kg	0.063	0.0066	1	12/19/18 11:50	12/19/18 15:38	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.063	0.0025	1	12/19/18 11:50	12/19/18 15:38	95-50-1	
1,2-Dichloroethane	**<0.0069**	mg/kg	0.063	0.0069	1	12/19/18 11:50	12/19/18 15:38	107-06-2	
1,3,5-Trimethylbenzene	**<0.010**	mg/kg	0.063	0.010	1	12/19/18 11:50	12/19/18 15:38	108-67-8	
1,3-Dichlorobenzene	**<0.0023**	mg/kg	0.063	0.0023	1	12/19/18 11:50	12/19/18 15:38	541-73-1	
1,4-Dichlorobenzene	**<0.0039**	mg/kg	0.063	0.0039	1	12/19/18 11:50	12/19/18 15:38	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	12/19/18 11:50	12/19/18 15:38	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	12/19/18 11:50	12/19/18 15:38	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	12/19/18 11:50	12/19/18 15:38	108-10-1	
Acetone	**<0.39**	mg/kg	1.3	0.39	1	12/19/18 11:50	12/19/18 15:38	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	12/19/18 11:50	12/19/18 15:38	71-43-2	
Bromodichloromethane	**<0.022**	mg/kg	0.063	0.022	1	12/19/18 11:50	12/19/18 15:38	75-27-4	
Bromoform	**<0.095**	mg/kg	0.25	0.095	1	12/19/18 11:50	12/19/18 15:38	75-25-2	
Bromomethane	**<0.074**	mg/kg	0.63	0.074	1	12/19/18 11:50	12/19/18 15:38	74-83-9	
Carbon tetrachloride	**<0.030**	mg/kg	0.25	0.030	1	12/19/18 11:50	12/19/18 15:38	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.063	0.0035	1	12/19/18 11:50	12/19/18 15:38	108-90-7	
Chloroethane	**<0.033**	mg/kg	0.63	0.033	1	12/19/18 11:50	12/19/18 15:38	75-00-3	
Chloroform	**<0.031**	mg/kg	0.063	0.031	1	12/19/18 11:50	12/19/18 15:38	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	12/19/18 11:50	12/19/18 15:38	74-87-3	
Dibromochloromethane	**<0.0073**	mg/kg	0.25	0.0073	1	12/19/18 11:50	12/19/18 15:38	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	12/19/18 11:50	12/19/18 15:38	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.063	0.0034	1	12/19/18 11:50	12/19/18 15:38	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	12/19/18 11:50	12/19/18 15:38	87-68-3	
Methyl-tert-butyl ether	**<0.0075**	mg/kg	0.063	0.0075	1	12/19/18 11:50	12/19/18 15:38	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	12/19/18 11:50	12/19/18 15:38	75-09-2	
Naphthalene	**<0.059**	mg/kg	0.25	0.059	1	12/19/18 11:50	12/19/18 15:38	91-20-3	
Styrene	**<0.0029**	mg/kg	0.063	0.0029	1	12/19/18 11:50	12/19/18 15:38	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.063	0.022	1	12/19/18 11:50	12/19/18 15:38	127-18-4	
Tetrahydrofuran	**<0.091**	mg/kg	2.5	0.091	1	12/19/18 11:50	12/19/18 15:38	109-99-9	
Toluene	**<0.015**	mg/kg	0.063	0.015	1	12/19/18 11:50	12/19/18 15:38	108-88-3	
Trichloroethene	**<0.0097**	mg/kg	0.063	0.0097	1	12/19/18 11:50	12/19/18 15:38	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	12/19/18 11:50	12/19/18 15:38	75-69-4	
Vinyl acetate	**<0.0073**	mg/kg	0.63	0.0073	1	12/19/18 11:50	12/19/18 15:38	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	12/19/18 11:50	12/19/18 15:38	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB201-S-5' **Lab ID: 10458888001** Collected: 12/13/18 12:30 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.063	0.010	1	12/19/18 11:50	12/19/18 15:38	156-59-2	
cis-1,3-Dichloropropene	**<0.0090**	mg/kg	0.063	0.0090	1	12/19/18 11:50	12/19/18 15:38	10061-01-5	
m&p-Xylene	**<0.0078**	mg/kg	0.13	0.0078	1	12/19/18 11:50	12/19/18 15:38	179601-23-1	
o-Xylene	**<0.015**	mg/kg	0.063	0.015	1	12/19/18 11:50	12/19/18 15:38	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.063	0.029	1	12/19/18 11:50	12/19/18 15:38	156-60-5	
trans-1,3-Dichloropropene	**<0.0087**	mg/kg	0.063	0.0087	1	12/19/18 11:50	12/19/18 15:38	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	116	%.	75-125		1	12/19/18 11:50	12/19/18 15:38	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 15:38	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 15:38	460-00-4	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB201-S-15' **Lab ID: 10458888002** Collected: 12/13/18 12:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**29.2**	%	0.10	0.10	1		12/19/18 15:44		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.034**	mg/kg	0.073	0.034	1	12/19/18 11:50	12/19/18 15:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.013**	mg/kg	0.29	0.013	1	12/19/18 11:50	12/19/18 15:19	79-34-5	
1,1,2-Trichloroethane	**<0.0087**	mg/kg	0.073	0.0087	1	12/19/18 11:50	12/19/18 15:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.085**	mg/kg	0.73	0.085	1	12/19/18 11:50	12/19/18 15:19	76-13-1	
1,1-Dichloroethane	**<0.0082**	mg/kg	0.073	0.0082	1	12/19/18 11:50	12/19/18 15:19	75-34-3	
1,1-Dichloroethene	**<0.022**	mg/kg	0.73	0.022	1	12/19/18 11:50	12/19/18 15:19	75-35-4	
1,2,4-Trichlorobenzene	**<0.016**	mg/kg	0.073	0.016	1	12/19/18 11:50	12/19/18 15:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.015**	mg/kg	0.073	0.015	1	12/19/18 11:50	12/19/18 15:19	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0077**	mg/kg	0.073	0.0077	1	12/19/18 11:50	12/19/18 15:19	106-93-4	
1,2-Dichlorobenzene	**<0.0029**	mg/kg	0.073	0.0029	1	12/19/18 11:50	12/19/18 15:19	95-50-1	
1,2-Dichloroethane	**<0.0080**	mg/kg	0.073	0.0080	1	12/19/18 11:50	12/19/18 15:19	107-06-2	
1,3,5-Trimethylbenzene	**<0.012**	mg/kg	0.073	0.012	1	12/19/18 11:50	12/19/18 15:19	108-67-8	
1,3-Dichlorobenzene	**<0.0027**	mg/kg	0.073	0.0027	1	12/19/18 11:50	12/19/18 15:19	541-73-1	
1,4-Dichlorobenzene	**<0.0045**	mg/kg	0.073	0.0045	1	12/19/18 11:50	12/19/18 15:19	106-46-7	
2-Butanone (MEK)	**<0.039**	mg/kg	0.36	0.039	1	12/19/18 11:50	12/19/18 15:19	78-93-3	
2-Hexanone	**<0.017**	mg/kg	0.36	0.017	1	12/19/18 11:50	12/19/18 15:19	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.015**	mg/kg	0.36	0.015	1	12/19/18 11:50	12/19/18 15:19	108-10-1	
Acetone	**0.99J**	mg/kg	1.5	0.45	1	12/19/18 11:50	12/19/18 15:19	67-64-1	CH
Benzene	**<0.0041**	mg/kg	0.029	0.0041	1	12/19/18 11:50	12/19/18 15:19	71-43-2	
Bromodichloromethane	**<0.025**	mg/kg	0.073	0.025	1	12/19/18 11:50	12/19/18 15:19	75-27-4	
Bromoform	**<0.11**	mg/kg	0.29	0.11	1	12/19/18 11:50	12/19/18 15:19	75-25-2	
Bromomethane	**<0.085**	mg/kg	0.73	0.085	1	12/19/18 11:50	12/19/18 15:19	74-83-9	
Carbon tetrachloride	**<0.035**	mg/kg	0.29	0.035	1	12/19/18 11:50	12/19/18 15:19	56-23-5	
Chlorobenzene	**<0.0041**	mg/kg	0.073	0.0041	1	12/19/18 11:50	12/19/18 15:19	108-90-7	
Chloroethane	**<0.038**	mg/kg	0.73	0.038	1	12/19/18 11:50	12/19/18 15:19	75-00-3	M1
Chloroform	**<0.036**	mg/kg	0.073	0.036	1	12/19/18 11:50	12/19/18 15:19	67-66-3	
Chloromethane	**<0.018**	mg/kg	0.29	0.018	1	12/19/18 11:50	12/19/18 15:19	74-87-3	
Dibromochloromethane	**<0.0085**	mg/kg	0.29	0.0085	1	12/19/18 11:50	12/19/18 15:19	124-48-1	
Dichlorodifluoromethane	**<0.024**	mg/kg	0.29	0.024	1	12/19/18 11:50	12/19/18 15:19	75-71-8	
Ethylbenzene	**<0.0040**	mg/kg	0.073	0.0040	1	12/19/18 11:50	12/19/18 15:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.018**	mg/kg	0.36	0.018	1	12/19/18 11:50	12/19/18 15:19	87-68-3	
Methyl-tert-butyl ether	**<0.0087**	mg/kg	0.073	0.0087	1	12/19/18 11:50	12/19/18 15:19	1634-04-4	
Methylene Chloride	**<0.14**	mg/kg	0.29	0.14	1	12/19/18 11:50	12/19/18 15:19	75-09-2	
Naphthalene	**<0.068**	mg/kg	0.29	0.068	1	12/19/18 11:50	12/19/18 15:19	91-20-3	
Styrene	**<0.0033**	mg/kg	0.073	0.0033	1	12/19/18 11:50	12/19/18 15:19	100-42-5	
Tetrachloroethene	**<0.026**	mg/kg	0.073	0.026	1	12/19/18 11:50	12/19/18 15:19	127-18-4	
Tetrahydrofuran	**<0.11**	mg/kg	2.9	0.11	1	12/19/18 11:50	12/19/18 15:19	109-99-9	M1,R1
Toluene	**<0.018**	mg/kg	0.073	0.018	1	12/19/18 11:50	12/19/18 15:19	108-88-3	
Trichloroethene	**<0.011**	mg/kg	0.073	0.011	1	12/19/18 11:50	12/19/18 15:19	79-01-6	
Trichlorofluoromethane	**<0.13**	mg/kg	0.29	0.13	1	12/19/18 11:50	12/19/18 15:19	75-69-4	
Vinyl acetate	**<0.0085**	mg/kg	0.73	0.0085	1	12/19/18 11:50	12/19/18 15:19	108-05-4	
Vinyl chloride	**<0.014**	mg/kg	0.029	0.014	1	12/19/18 11:50	12/19/18 15:19	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB201-S-15' **Lab ID: 10458888002** Collected: 12/13/18 12:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.012**	mg/kg	0.073	0.012	1	12/19/18 11:50	12/19/18 15:19	156-59-2	
cis-1,3-Dichloropropene	**<0.010**	mg/kg	0.073	0.010	1	12/19/18 11:50	12/19/18 15:19	10061-01-5	
m&p-Xylene	**<0.0090**	mg/kg	0.15	0.0090	1	12/19/18 11:50	12/19/18 15:19	179601-23-1	
o-Xylene	**<0.017**	mg/kg	0.073	0.017	1	12/19/18 11:50	12/19/18 15:19	95-47-6	
trans-1,2-Dichloroethene	**<0.034**	mg/kg	0.073	0.034	1	12/19/18 11:50	12/19/18 15:19	156-60-5	
trans-1,3-Dichloropropene	**<0.010**	mg/kg	0.073	0.010	1	12/19/18 11:50	12/19/18 15:19	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	115	%.	75-125		1	12/19/18 11:50	12/19/18 15:19	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	12/19/18 11:50	12/19/18 15:19	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	12/19/18 11:50	12/19/18 15:19	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB202-S-5' **Lab ID: 10458888003** Collected: 12/13/18 11:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**10.3**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.028**	mg/kg	0.059	0.028	1	12/19/18 11:50	12/19/18 15:57	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.24	0.010	1	12/19/18 11:50	12/19/18 15:57	79-34-5	
1,1,2-Trichloroethane	**<0.0071**	mg/kg	0.059	0.0071	1	12/19/18 11:50	12/19/18 15:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.069**	mg/kg	0.59	0.069	1	12/19/18 11:50	12/19/18 15:57	76-13-1	
1,1-Dichloroethane	**<0.0067**	mg/kg	0.059	0.0067	1	12/19/18 11:50	12/19/18 15:57	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.59	0.018	1	12/19/18 11:50	12/19/18 15:57	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.059	0.013	1	12/19/18 11:50	12/19/18 15:57	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.059	0.012	1	12/19/18 11:50	12/19/18 15:57	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0063**	mg/kg	0.059	0.0063	1	12/19/18 11:50	12/19/18 15:57	106-93-4	
1,2-Dichlorobenzene	**<0.0024**	mg/kg	0.059	0.0024	1	12/19/18 11:50	12/19/18 15:57	95-50-1	
1,2-Dichloroethane	**<0.0065**	mg/kg	0.059	0.0065	1	12/19/18 11:50	12/19/18 15:57	107-06-2	
1,3,5-Trimethylbenzene	**<0.0095**	mg/kg	0.059	0.0095	1	12/19/18 11:50	12/19/18 15:57	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.059	0.0022	1	12/19/18 11:50	12/19/18 15:57	541-73-1	
1,4-Dichlorobenzene	**<0.0037**	mg/kg	0.059	0.0037	1	12/19/18 11:50	12/19/18 15:57	106-46-7	
2-Butanone (MEK)	**<0.032**	mg/kg	0.30	0.032	1	12/19/18 11:50	12/19/18 15:57	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.30	0.014	1	12/19/18 11:50	12/19/18 15:57	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.30	0.012	1	12/19/18 11:50	12/19/18 15:57	108-10-1	
Acetone	**<0.37**	mg/kg	1.2	0.37	1	12/19/18 11:50	12/19/18 15:57	67-64-1	
Benzene	**<0.0034**	mg/kg	0.024	0.0034	1	12/19/18 11:50	12/19/18 15:57	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.059	0.020	1	12/19/18 11:50	12/19/18 15:57	75-27-4	
Bromoform	**<0.090**	mg/kg	0.24	0.090	1	12/19/18 11:50	12/19/18 15:57	75-25-2	
Bromomethane	**<0.070**	mg/kg	0.59	0.070	1	12/19/18 11:50	12/19/18 15:57	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.24	0.028	1	12/19/18 11:50	12/19/18 15:57	56-23-5	
Chlorobenzene	**<0.0034**	mg/kg	0.059	0.0034	1	12/19/18 11:50	12/19/18 15:57	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.59	0.031	1	12/19/18 11:50	12/19/18 15:57	75-00-3	
Chloroform	**<0.030**	mg/kg	0.059	0.030	1	12/19/18 11:50	12/19/18 15:57	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.24	0.014	1	12/19/18 11:50	12/19/18 15:57	74-87-3	
Dibromochloromethane	**<0.0069**	mg/kg	0.24	0.0069	1	12/19/18 11:50	12/19/18 15:57	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.24	0.019	1	12/19/18 11:50	12/19/18 15:57	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	12/19/18 11:50	12/19/18 15:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.30	0.015	1	12/19/18 11:50	12/19/18 15:57	87-68-3	
Methyl-tert-butyl ether	**<0.0071**	mg/kg	0.059	0.0071	1	12/19/18 11:50	12/19/18 15:57	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.24	0.11	1	12/19/18 11:50	12/19/18 15:57	75-09-2	
Naphthalene	**<0.056**	mg/kg	0.24	0.056	1	12/19/18 11:50	12/19/18 15:57	91-20-3	
Styrene	**<0.0027**	mg/kg	0.059	0.0027	1	12/19/18 11:50	12/19/18 15:57	100-42-5	
Tetrachloroethene	**<0.021**	mg/kg	0.059	0.021	1	12/19/18 11:50	12/19/18 15:57	127-18-4	
Tetrahydrofuran	**<0.086**	mg/kg	2.4	0.086	1	12/19/18 11:50	12/19/18 15:57	109-99-9	
Toluene	**0.016J**	mg/kg	0.059	0.015	1	12/19/18 11:50	12/19/18 15:57	108-88-3	
Trichloroethene	**<0.0092**	mg/kg	0.059	0.0092	1	12/19/18 11:50	12/19/18 15:57	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.24	0.10	1	12/19/18 11:50	12/19/18 15:57	75-69-4	
Vinyl acetate	**<0.0069**	mg/kg	0.59	0.0069	1	12/19/18 11:50	12/19/18 15:57	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.024	0.012	1	12/19/18 11:50	12/19/18 15:57	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB202-S-5' **Lab ID: 10458888003** Collected: 12/13/18 11:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0099**	mg/kg	0.059	0.0099	1	12/19/18 11:50	12/19/18 15:57	156-59-2	
cis-1,3-Dichloropropene	**<0.0085**	mg/kg	0.059	0.0085	1	12/19/18 11:50	12/19/18 15:57	10061-01-5	
m&p-Xylene	**0.014J**	mg/kg	0.12	0.0074	1	12/19/18 11:50	12/19/18 15:57	179601-23-1	B
o-Xylene	**<0.014**	mg/kg	0.059	0.014	1	12/19/18 11:50	12/19/18 15:57	95-47-6	
trans-1,2-Dichloroethene	**<0.028**	mg/kg	0.059	0.028	1	12/19/18 11:50	12/19/18 15:57	156-60-5	
trans-1,3-Dichloropropene	**<0.0083**	mg/kg	0.059	0.0083	1	12/19/18 11:50	12/19/18 15:57	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	114	%.	75-125		1	12/19/18 11:50	12/19/18 15:57	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	12/19/18 11:50	12/19/18 15:57	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 15:57	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB202-S-15' **Lab ID: 10458888004** Collected: 12/13/18 12:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**33.3**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.036**	mg/kg	0.078	0.036	1	12/19/18 11:50	12/19/18 16:16	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.014**	mg/kg	0.31	0.014	1	12/19/18 11:50	12/19/18 16:16	79-34-5	
1,1,2-Trichloroethane	**<0.0094**	mg/kg	0.078	0.0094	1	12/19/18 11:50	12/19/18 16:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.091**	mg/kg	0.78	0.091	1	12/19/18 11:50	12/19/18 16:16	76-13-1	
1,1-Dichloroethane	**<0.0088**	mg/kg	0.078	0.0088	1	12/19/18 11:50	12/19/18 16:16	75-34-3	
1,1-Dichloroethene	**<0.023**	mg/kg	0.78	0.023	1	12/19/18 11:50	12/19/18 16:16	75-35-4	
1,2,4-Trichlorobenzene	**<0.017**	mg/kg	0.078	0.017	1	12/19/18 11:50	12/19/18 16:16	120-82-1	
1,2,4-Trimethylbenzene	**<0.016**	mg/kg	0.078	0.016	1	12/19/18 11:50	12/19/18 16:16	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0082**	mg/kg	0.078	0.0082	1	12/19/18 11:50	12/19/18 16:16	106-93-4	
1,2-Dichlorobenzene	**<0.0032**	mg/kg	0.078	0.0032	1	12/19/18 11:50	12/19/18 16:16	95-50-1	
1,2-Dichloroethane	**<0.0086**	mg/kg	0.078	0.0086	1	12/19/18 11:50	12/19/18 16:16	107-06-2	
1,3,5-Trimethylbenzene	**<0.012**	mg/kg	0.078	0.012	1	12/19/18 11:50	12/19/18 16:16	108-67-8	
1,3-Dichlorobenzene	**<0.0029**	mg/kg	0.078	0.0029	1	12/19/18 11:50	12/19/18 16:16	541-73-1	
1,4-Dichlorobenzene	**<0.0049**	mg/kg	0.078	0.0049	1	12/19/18 11:50	12/19/18 16:16	106-46-7	
2-Butanone (MEK)	**<0.042**	mg/kg	0.39	0.042	1	12/19/18 11:50	12/19/18 16:16	78-93-3	
2-Hexanone	**<0.018**	mg/kg	0.39	0.018	1	12/19/18 11:50	12/19/18 16:16	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.016**	mg/kg	0.39	0.016	1	12/19/18 11:50	12/19/18 16:16	108-10-1	
Acetone	**0.84J**	mg/kg	1.6	0.49	1	12/19/18 11:50	12/19/18 16:16	67-64-1	CH
Benzene	**<0.0044**	mg/kg	0.031	0.0044	1	12/19/18 11:50	12/19/18 16:16	71-43-2	
Bromodichloromethane	**<0.027**	mg/kg	0.078	0.027	1	12/19/18 11:50	12/19/18 16:16	75-27-4	
Bromoform	**<0.12**	mg/kg	0.31	0.12	1	12/19/18 11:50	12/19/18 16:16	75-25-2	
Bromomethane	**<0.092**	mg/kg	0.78	0.092	1	12/19/18 11:50	12/19/18 16:16	74-83-9	
Carbon tetrachloride	**<0.037**	mg/kg	0.31	0.037	1	12/19/18 11:50	12/19/18 16:16	56-23-5	
Chlorobenzene	**<0.0044**	mg/kg	0.078	0.0044	1	12/19/18 11:50	12/19/18 16:16	108-90-7	
Chloroethane	**<0.041**	mg/kg	0.78	0.041	1	12/19/18 11:50	12/19/18 16:16	75-00-3	
Chloroform	**<0.039**	mg/kg	0.078	0.039	1	12/19/18 11:50	12/19/18 16:16	67-66-3	
Chloromethane	**<0.019**	mg/kg	0.31	0.019	1	12/19/18 11:50	12/19/18 16:16	74-87-3	
Dibromochloromethane	**<0.0091**	mg/kg	0.31	0.0091	1	12/19/18 11:50	12/19/18 16:16	124-48-1	
Dichlorodifluoromethane	**<0.025**	mg/kg	0.31	0.025	1	12/19/18 11:50	12/19/18 16:16	75-71-8	
Ethylbenzene	**<0.0043**	mg/kg	0.078	0.0043	1	12/19/18 11:50	12/19/18 16:16	100-41-4	
Hexachloro-1,3-butadiene	**<0.019**	mg/kg	0.39	0.019	1	12/19/18 11:50	12/19/18 16:16	87-68-3	
Methyl-tert-butyl ether	**<0.0093**	mg/kg	0.078	0.0093	1	12/19/18 11:50	12/19/18 16:16	1634-04-4	
Methylene Chloride	**<0.15**	mg/kg	0.31	0.15	1	12/19/18 11:50	12/19/18 16:16	75-09-2	
Naphthalene	**<0.073**	mg/kg	0.31	0.073	1	12/19/18 11:50	12/19/18 16:16	91-20-3	
Styrene	**<0.0036**	mg/kg	0.078	0.0036	1	12/19/18 11:50	12/19/18 16:16	100-42-5	
Tetrachloroethene	**<0.028**	mg/kg	0.078	0.028	1	12/19/18 11:50	12/19/18 16:16	127-18-4	
Tetrahydrofuran	**<0.11**	mg/kg	3.1	0.11	1	12/19/18 11:50	12/19/18 16:16	109-99-9	
Toluene	**<0.019**	mg/kg	0.078	0.019	1	12/19/18 11:50	12/19/18 16:16	108-88-3	
Trichloroethene	**<0.012**	mg/kg	0.078	0.012	1	12/19/18 11:50	12/19/18 16:16	79-01-6	
Trichlorofluoromethane	**<0.14**	mg/kg	0.31	0.14	1	12/19/18 11:50	12/19/18 16:16	75-69-4	
Vinyl acetate	**<0.0091**	mg/kg	0.78	0.0091	1	12/19/18 11:50	12/19/18 16:16	108-05-4	
Vinyl chloride	**<0.015**	mg/kg	0.031	0.015	1	12/19/18 11:50	12/19/18 16:16	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB202-S-15' **Lab ID: 10458888004** Collected: 12/13/18 12:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.013**	mg/kg	0.078	0.013	1	12/19/18 11:50	12/19/18 16:16	156-59-2	
cis-1,3-Dichloropropene	**<0.011**	mg/kg	0.078	0.011	1	12/19/18 11:50	12/19/18 16:16	10061-01-5	
m&p-Xylene	**<0.0097**	mg/kg	0.16	0.0097	1	12/19/18 11:50	12/19/18 16:16	179601-23-1	
o-Xylene	**<0.018**	mg/kg	0.078	0.018	1	12/19/18 11:50	12/19/18 16:16	95-47-6	
trans-1,2-Dichloroethene	**<0.037**	mg/kg	0.078	0.037	1	12/19/18 11:50	12/19/18 16:16	156-60-5	
trans-1,3-Dichloropropene	**<0.011**	mg/kg	0.078	0.011	1	12/19/18 11:50	12/19/18 16:16	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-125		1	12/19/18 11:50	12/19/18 16:16	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	12/19/18 11:50	12/19/18 16:16	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	12/19/18 11:50	12/19/18 16:16	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB203-S-5' **Lab ID: 10458888005** Collected: 12/13/18 11:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**9.6**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.062	0.029	1	12/19/18 11:50	12/19/18 16:35	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.25	0.011	1	12/19/18 11:50	12/19/18 16:35	79-34-5	
1,1,2-Trichloroethane	**<0.0074**	mg/kg	0.062	0.0074	1	12/19/18 11:50	12/19/18 16:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.072**	mg/kg	0.62	0.072	1	12/19/18 11:50	12/19/18 16:35	76-13-1	
1,1-Dichloroethane	**<0.0069**	mg/kg	0.062	0.0069	1	12/19/18 11:50	12/19/18 16:35	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.62	0.019	1	12/19/18 11:50	12/19/18 16:35	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.062	0.014	1	12/19/18 11:50	12/19/18 16:35	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.062	0.012	1	12/19/18 11:50	12/19/18 16:35	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0065**	mg/kg	0.062	0.0065	1	12/19/18 11:50	12/19/18 16:35	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.062	0.0025	1	12/19/18 11:50	12/19/18 16:35	95-50-1	
1,2-Dichloroethane	**<0.0068**	mg/kg	0.062	0.0068	1	12/19/18 11:50	12/19/18 16:35	107-06-2	
1,3,5-Trimethylbenzene	**<0.0098**	mg/kg	0.062	0.0098	1	12/19/18 11:50	12/19/18 16:35	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.062	0.0022	1	12/19/18 11:50	12/19/18 16:35	541-73-1	
1,4-Dichlorobenzene	**<0.0038**	mg/kg	0.062	0.0038	1	12/19/18 11:50	12/19/18 16:35	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	12/19/18 11:50	12/19/18 16:35	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	12/19/18 11:50	12/19/18 16:35	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	12/19/18 11:50	12/19/18 16:35	108-10-1	
Acetone	**<0.38**	mg/kg	1.2	0.38	1	12/19/18 11:50	12/19/18 16:35	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	12/19/18 11:50	12/19/18 16:35	71-43-2	
Bromodichloromethane	**<0.021**	mg/kg	0.062	0.021	1	12/19/18 11:50	12/19/18 16:35	75-27-4	
Bromoform	**<0.093**	mg/kg	0.25	0.093	1	12/19/18 11:50	12/19/18 16:35	75-25-2	
Bromomethane	**<0.072**	mg/kg	0.62	0.072	1	12/19/18 11:50	12/19/18 16:35	74-83-9	
Carbon tetrachloride	**<0.030**	mg/kg	0.25	0.030	1	12/19/18 11:50	12/19/18 16:35	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.062	0.0035	1	12/19/18 11:50	12/19/18 16:35	108-90-7	
Chloroethane	**<0.032**	mg/kg	0.62	0.032	1	12/19/18 11:50	12/19/18 16:35	75-00-3	
Chloroform	**<0.031**	mg/kg	0.062	0.031	1	12/19/18 11:50	12/19/18 16:35	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	12/19/18 11:50	12/19/18 16:35	74-87-3	
Dibromochloromethane	**<0.0072**	mg/kg	0.25	0.0072	1	12/19/18 11:50	12/19/18 16:35	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	12/19/18 11:50	12/19/18 16:35	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.062	0.0034	1	12/19/18 11:50	12/19/18 16:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	12/19/18 11:50	12/19/18 16:35	87-68-3	
Methyl-tert-butyl ether	**<0.0073**	mg/kg	0.062	0.0073	1	12/19/18 11:50	12/19/18 16:35	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	12/19/18 11:50	12/19/18 16:35	75-09-2	
Naphthalene	**<0.058**	mg/kg	0.25	0.058	1	12/19/18 11:50	12/19/18 16:35	91-20-3	
Styrene	**<0.0028**	mg/kg	0.062	0.0028	1	12/19/18 11:50	12/19/18 16:35	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.062	0.022	1	12/19/18 11:50	12/19/18 16:35	127-18-4	
Tetrahydrofuran	**<0.090**	mg/kg	2.5	0.090	1	12/19/18 11:50	12/19/18 16:35	109-99-9	
Toluene	**<0.015**	mg/kg	0.062	0.015	1	12/19/18 11:50	12/19/18 16:35	108-88-3	
Trichloroethene	**<0.0095**	mg/kg	0.062	0.0095	1	12/19/18 11:50	12/19/18 16:35	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	12/19/18 11:50	12/19/18 16:35	75-69-4	
Vinyl acetate	**<0.0071**	mg/kg	0.62	0.0071	1	12/19/18 11:50	12/19/18 16:35	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	12/19/18 11:50	12/19/18 16:35	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB203-S-5' **Lab ID: 10458888005** Collected: 12/13/18 11:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.062	0.010	1	12/19/18 11:50	12/19/18 16:35	156-59-2	
cis-1,3-Dichloropropene	**<0.0088**	mg/kg	0.062	0.0088	1	12/19/18 11:50	12/19/18 16:35	10061-01-5	
m&p-Xylene	**<0.0076**	mg/kg	0.12	0.0076	1	12/19/18 11:50	12/19/18 16:35	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.062	0.014	1	12/19/18 11:50	12/19/18 16:35	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.062	0.029	1	12/19/18 11:50	12/19/18 16:35	156-60-5	
trans-1,3-Dichloropropene	**<0.0086**	mg/kg	0.062	0.0086	1	12/19/18 11:50	12/19/18 16:35	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	115	%.	75-125		1	12/19/18 11:50	12/19/18 16:35	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 16:35	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1	12/19/18 11:50	12/19/18 16:35	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB203-S-15' **Lab ID: 10458888006** Collected: 12/13/18 11:15 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**36.4**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.038**	mg/kg	0.081	0.038	1	12/19/18 11:50	12/19/18 16:53	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.014**	mg/kg	0.33	0.014	1	12/19/18 11:50	12/19/18 16:53	79-34-5	
1,1,2-Trichloroethane	**<0.0097**	mg/kg	0.081	0.0097	1	12/19/18 11:50	12/19/18 16:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.094**	mg/kg	0.81	0.094	1	12/19/18 11:50	12/19/18 16:53	76-13-1	
1,1-Dichloroethane	**<0.0091**	mg/kg	0.081	0.0091	1	12/19/18 11:50	12/19/18 16:53	75-34-3	
1,1-Dichloroethene	**<0.024**	mg/kg	0.81	0.024	1	12/19/18 11:50	12/19/18 16:53	75-35-4	
1,2,4-Trichlorobenzene	**<0.018**	mg/kg	0.081	0.018	1	12/19/18 11:50	12/19/18 16:53	120-82-1	
1,2,4-Trimethylbenzene	**<0.016**	mg/kg	0.081	0.016	1	12/19/18 11:50	12/19/18 16:53	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0086**	mg/kg	0.081	0.0086	1	12/19/18 11:50	12/19/18 16:53	106-93-4	
1,2-Dichlorobenzene	**<0.0033**	mg/kg	0.081	0.0033	1	12/19/18 11:50	12/19/18 16:53	95-50-1	
1,2-Dichloroethane	**<0.0089**	mg/kg	0.081	0.0089	1	12/19/18 11:50	12/19/18 16:53	107-06-2	
1,3,5-Trimethylbenzene	**<0.013**	mg/kg	0.081	0.013	1	12/19/18 11:50	12/19/18 16:53	108-67-8	
1,3-Dichlorobenzene	**<0.0030**	mg/kg	0.081	0.0030	1	12/19/18 11:50	12/19/18 16:53	541-73-1	
1,4-Dichlorobenzene	**<0.0050**	mg/kg	0.081	0.0050	1	12/19/18 11:50	12/19/18 16:53	106-46-7	
2-Butanone (MEK)	**<0.043**	mg/kg	0.41	0.043	1	12/19/18 11:50	12/19/18 16:53	78-93-3	
2-Hexanone	**<0.019**	mg/kg	0.41	0.019	1	12/19/18 11:50	12/19/18 16:53	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.017**	mg/kg	0.41	0.017	1	12/19/18 11:50	12/19/18 16:53	108-10-1	
Acetone	**<0.51**	mg/kg	1.6	0.51	1	12/19/18 11:50	12/19/18 16:53	67-64-1	
Benzene	**<0.0046**	mg/kg	0.033	0.0046	1	12/19/18 11:50	12/19/18 16:53	71-43-2	
Bromodichloromethane	**<0.028**	mg/kg	0.081	0.028	1	12/19/18 11:50	12/19/18 16:53	75-27-4	
Bromoform	**<0.12**	mg/kg	0.33	0.12	1	12/19/18 11:50	12/19/18 16:53	75-25-2	
Bromomethane	**<0.095**	mg/kg	0.81	0.095	1	12/19/18 11:50	12/19/18 16:53	74-83-9	
Carbon tetrachloride	**<0.039**	mg/kg	0.33	0.039	1	12/19/18 11:50	12/19/18 16:53	56-23-5	
Chlorobenzene	**<0.0046**	mg/kg	0.081	0.0046	1	12/19/18 11:50	12/19/18 16:53	108-90-7	
Chloroethane	**<0.042**	mg/kg	0.81	0.042	1	12/19/18 11:50	12/19/18 16:53	75-00-3	
Chloroform	**<0.041**	mg/kg	0.081	0.041	1	12/19/18 11:50	12/19/18 16:53	67-66-3	
Chloromethane	**<0.020**	mg/kg	0.33	0.020	1	12/19/18 11:50	12/19/18 16:53	74-87-3	
Dibromochloromethane	**<0.0094**	mg/kg	0.33	0.0094	1	12/19/18 11:50	12/19/18 16:53	124-48-1	
Dichlorodifluoromethane	**<0.026**	mg/kg	0.33	0.026	1	12/19/18 11:50	12/19/18 16:53	75-71-8	
Ethylbenzene	**<0.0044**	mg/kg	0.081	0.0044	1	12/19/18 11:50	12/19/18 16:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.020**	mg/kg	0.41	0.020	1	12/19/18 11:50	12/19/18 16:53	87-68-3	
Methyl-tert-butyl ether	**<0.0097**	mg/kg	0.081	0.0097	1	12/19/18 11:50	12/19/18 16:53	1634-04-4	
Methylene Chloride	**<0.15**	mg/kg	0.33	0.15	1	12/19/18 11:50	12/19/18 16:53	75-09-2	
Naphthalene	**<0.076**	mg/kg	0.33	0.076	1	12/19/18 11:50	12/19/18 16:53	91-20-3	
Styrene	**<0.0037**	mg/kg	0.081	0.0037	1	12/19/18 11:50	12/19/18 16:53	100-42-5	
Tetrachloroethene	**<0.029**	mg/kg	0.081	0.029	1	12/19/18 11:50	12/19/18 16:53	127-18-4	
Tetrahydrofuran	**<0.12**	mg/kg	3.3	0.12	1	12/19/18 11:50	12/19/18 16:53	109-99-9	
Toluene	**<0.020**	mg/kg	0.081	0.020	1	12/19/18 11:50	12/19/18 16:53	108-88-3	
Trichloroethene	**<0.013**	mg/kg	0.081	0.013	1	12/19/18 11:50	12/19/18 16:53	79-01-6	
Trichlorofluoromethane	**<0.14**	mg/kg	0.33	0.14	1	12/19/18 11:50	12/19/18 16:53	75-69-4	
Vinyl acetate	**<0.0094**	mg/kg	0.81	0.0094	1	12/19/18 11:50	12/19/18 16:53	108-05-4	
Vinyl chloride	**<0.016**	mg/kg	0.033	0.016	1	12/19/18 11:50	12/19/18 16:53	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB203-S-15' **Lab ID: 10458888006** Collected: 12/13/18 11:15 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.013**	mg/kg	0.081	0.013	1	12/19/18 11:50	12/19/18 16:53	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.081	0.012	1	12/19/18 11:50	12/19/18 16:53	10061-01-5	
m&p-Xylene	**<0.010**	mg/kg	0.16	0.010	1	12/19/18 11:50	12/19/18 16:53	179601-23-1	
o-Xylene	**<0.019**	mg/kg	0.081	0.019	1	12/19/18 11:50	12/19/18 16:53	95-47-6	
trans-1,2-Dichloroethene	**<0.038**	mg/kg	0.081	0.038	1	12/19/18 11:50	12/19/18 16:53	156-60-5	
trans-1,3-Dichloropropene	**<0.011**	mg/kg	0.081	0.011	1	12/19/18 11:50	12/19/18 16:53	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	115	%.	75-125		1	12/19/18 11:50	12/19/18 16:53	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1	12/19/18 11:50	12/19/18 16:53	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	12/19/18 11:50	12/19/18 16:53	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB204-S-5' **Lab ID: 10458888007** Collected: 12/13/18 10:30 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.8**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.030**	mg/kg	0.065	0.030	1	12/19/18 11:50	12/19/18 17:12	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.26	0.011	1	12/19/18 11:50	12/19/18 17:12	79-34-5	
1,1,2-Trichloroethane	**<0.0077**	mg/kg	0.065	0.0077	1	12/19/18 11:50	12/19/18 17:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.075**	mg/kg	0.65	0.075	1	12/19/18 11:50	12/19/18 17:12	76-13-1	
1,1-Dichloroethane	**<0.0073**	mg/kg	0.065	0.0073	1	12/19/18 11:50	12/19/18 17:12	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.65	0.019	1	12/19/18 11:50	12/19/18 17:12	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.065	0.014	1	12/19/18 11:50	12/19/18 17:12	120-82-1	
1,2,4-Trimethylbenzene	**<0.013**	mg/kg	0.065	0.013	1	12/19/18 11:50	12/19/18 17:12	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0068**	mg/kg	0.065	0.0068	1	12/19/18 11:50	12/19/18 17:12	106-93-4	
1,2-Dichlorobenzene	**<0.0026**	mg/kg	0.065	0.0026	1	12/19/18 11:50	12/19/18 17:12	95-50-1	
1,2-Dichloroethane	**<0.0071**	mg/kg	0.065	0.0071	1	12/19/18 11:50	12/19/18 17:12	107-06-2	
1,3,5-Trimethylbenzene	**<0.010**	mg/kg	0.065	0.010	1	12/19/18 11:50	12/19/18 17:12	108-67-8	
1,3-Dichlorobenzene	**<0.0024**	mg/kg	0.065	0.0024	1	12/19/18 11:50	12/19/18 17:12	541-73-1	
1,4-Dichlorobenzene	**<0.0040**	mg/kg	0.065	0.0040	1	12/19/18 11:50	12/19/18 17:12	106-46-7	
2-Butanone (MEK)	**<0.034**	mg/kg	0.32	0.034	1	12/19/18 11:50	12/19/18 17:12	78-93-3	
2-Hexanone	**<0.015**	mg/kg	0.32	0.015	1	12/19/18 11:50	12/19/18 17:12	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.32	0.013	1	12/19/18 11:50	12/19/18 17:12	108-10-1	
Acetone	**<0.40**	mg/kg	1.3	0.40	1	12/19/18 11:50	12/19/18 17:12	67-64-1	
Benzene	**<0.0036**	mg/kg	0.026	0.0036	1	12/19/18 11:50	12/19/18 17:12	71-43-2	
Bromodichloromethane	**<0.022**	mg/kg	0.065	0.022	1	12/19/18 11:50	12/19/18 17:12	75-27-4	
Bromoform	**<0.098**	mg/kg	0.26	0.098	1	12/19/18 11:50	12/19/18 17:12	75-25-2	
Bromomethane	**<0.076**	mg/kg	0.65	0.076	1	12/19/18 11:50	12/19/18 17:12	74-83-9	
Carbon tetrachloride	**<0.031**	mg/kg	0.26	0.031	1	12/19/18 11:50	12/19/18 17:12	56-23-5	
Chlorobenzene	**<0.0036**	mg/kg	0.065	0.0036	1	12/19/18 11:50	12/19/18 17:12	108-90-7	
Chloroethane	**<0.034**	mg/kg	0.65	0.034	1	12/19/18 11:50	12/19/18 17:12	75-00-3	
Chloroform	**<0.032**	mg/kg	0.065	0.032	1	12/19/18 11:50	12/19/18 17:12	67-66-3	
Chloromethane	**<0.016**	mg/kg	0.26	0.016	1	12/19/18 11:50	12/19/18 17:12	74-87-3	
Dibromochloromethane	**<0.0075**	mg/kg	0.26	0.0075	1	12/19/18 11:50	12/19/18 17:12	124-48-1	
Dichlorodifluoromethane	**<0.021**	mg/kg	0.26	0.021	1	12/19/18 11:50	12/19/18 17:12	75-71-8	
Ethylbenzene	**<0.0035**	mg/kg	0.065	0.0035	1	12/19/18 11:50	12/19/18 17:12	100-41-4	
Hexachloro-1,3-butadiene	**<0.016**	mg/kg	0.32	0.016	1	12/19/18 11:50	12/19/18 17:12	87-68-3	
Methyl-tert-butyl ether	**<0.0077**	mg/kg	0.065	0.0077	1	12/19/18 11:50	12/19/18 17:12	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.26	0.12	1	12/19/18 11:50	12/19/18 17:12	75-09-2	
Naphthalene	**<0.061**	mg/kg	0.26	0.061	1	12/19/18 11:50	12/19/18 17:12	91-20-3	
Styrene	**<0.0029**	mg/kg	0.065	0.0029	1	12/19/18 11:50	12/19/18 17:12	100-42-5	
Tetrachloroethene	**<0.023**	mg/kg	0.065	0.023	1	12/19/18 11:50	12/19/18 17:12	127-18-4	
Tetrahydrofuran	**<0.094**	mg/kg	2.6	0.094	1	12/19/18 11:50	12/19/18 17:12	109-99-9	
Toluene	**<0.016**	mg/kg	0.065	0.016	1	12/19/18 11:50	12/19/18 17:12	108-88-3	
Trichloroethene	**<0.010**	mg/kg	0.065	0.010	1	12/19/18 11:50	12/19/18 17:12	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.26	0.11	1	12/19/18 11:50	12/19/18 17:12	75-69-4	
Vinyl acetate	**<0.0075**	mg/kg	0.65	0.0075	1	12/19/18 11:50	12/19/18 17:12	108-05-4	
Vinyl chloride	**<0.013**	mg/kg	0.026	0.013	1	12/19/18 11:50	12/19/18 17:12	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB204-S-5' **Lab ID: 10458888007** Collected: 12/13/18 10:30 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.011**	mg/kg	0.065	0.011	1	12/19/18 11:50	12/19/18 17:12	156-59-2	
cis-1,3-Dichloropropene	**<0.0093**	mg/kg	0.065	0.0093	1	12/19/18 11:50	12/19/18 17:12	10061-01-5	
m&p-Xylene	**<0.0080**	mg/kg	0.13	0.0080	1	12/19/18 11:50	12/19/18 17:12	179601-23-1	
o-Xylene	**<0.015**	mg/kg	0.065	0.015	1	12/19/18 11:50	12/19/18 17:12	95-47-6	
trans-1,2-Dichloroethene	**<0.030**	mg/kg	0.065	0.030	1	12/19/18 11:50	12/19/18 17:12	156-60-5	
trans-1,3-Dichloropropene	**<0.0090**	mg/kg	0.065	0.0090	1	12/19/18 11:50	12/19/18 17:12	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-125		1	12/19/18 11:50	12/19/18 17:12	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	12/19/18 11:50	12/19/18 17:12	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	12/19/18 11:50	12/19/18 17:12	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB204-S-15' **Lab ID: 10458888008** Collected: 12/13/18 10:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**35.1**	%	0.10	0.10	1		12/19/18 15:45		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.040**	mg/kg	0.087	0.040	1	12/19/18 11:50	12/19/18 17:31	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.015**	mg/kg	0.35	0.015	1	12/19/18 11:50	12/19/18 17:31	79-34-5	
1,1,2-Trichloroethane	**<0.010**	mg/kg	0.087	0.010	1	12/19/18 11:50	12/19/18 17:31	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.10**	mg/kg	0.87	0.10	1	12/19/18 11:50	12/19/18 17:31	76-13-1	
1,1-Dichloroethane	**<0.0097**	mg/kg	0.087	0.0097	1	12/19/18 11:50	12/19/18 17:31	75-34-3	
1,1-Dichloroethene	**<0.026**	mg/kg	0.87	0.026	1	12/19/18 11:50	12/19/18 17:31	75-35-4	
1,2,4-Trichlorobenzene	**<0.019**	mg/kg	0.087	0.019	1	12/19/18 11:50	12/19/18 17:31	120-82-1	
1,2,4-Trimethylbenzene	**<0.017**	mg/kg	0.087	0.017	1	12/19/18 11:50	12/19/18 17:31	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0091**	mg/kg	0.087	0.0091	1	12/19/18 11:50	12/19/18 17:31	106-93-4	
1,2-Dichlorobenzene	**<0.0035**	mg/kg	0.087	0.0035	1	12/19/18 11:50	12/19/18 17:31	95-50-1	
1,2-Dichloroethane	**<0.0095**	mg/kg	0.087	0.0095	1	12/19/18 11:50	12/19/18 17:31	107-06-2	
1,3,5-Trimethylbenzene	**<0.014**	mg/kg	0.087	0.014	1	12/19/18 11:50	12/19/18 17:31	108-67-8	
1,3-Dichlorobenzene	**<0.0032**	mg/kg	0.087	0.0032	1	12/19/18 11:50	12/19/18 17:31	541-73-1	
1,4-Dichlorobenzene	**<0.0054**	mg/kg	0.087	0.0054	1	12/19/18 11:50	12/19/18 17:31	106-46-7	
2-Butanone (MEK)	**<0.046**	mg/kg	0.43	0.046	1	12/19/18 11:50	12/19/18 17:31	78-93-3	
2-Hexanone	**<0.020**	mg/kg	0.43	0.020	1	12/19/18 11:50	12/19/18 17:31	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.018**	mg/kg	0.43	0.018	1	12/19/18 11:50	12/19/18 17:31	108-10-1	
Acetone	**0.91J**	mg/kg	1.7	0.54	1	12/19/18 11:50	12/19/18 17:31	67-64-1	CH
Benzene	**<0.0049**	mg/kg	0.035	0.0049	1	12/19/18 11:50	12/19/18 17:31	71-43-2	
Bromodichloromethane	**<0.030**	mg/kg	0.087	0.030	1	12/19/18 11:50	12/19/18 17:31	75-27-4	
Bromoform	**<0.13**	mg/kg	0.35	0.13	1	12/19/18 11:50	12/19/18 17:31	75-25-2	
Bromomethane	**<0.10**	mg/kg	0.87	0.10	1	12/19/18 11:50	12/19/18 17:31	74-83-9	
Carbon tetrachloride	**<0.041**	mg/kg	0.35	0.041	1	12/19/18 11:50	12/19/18 17:31	56-23-5	
Chlorobenzene	**<0.0049**	mg/kg	0.087	0.0049	1	12/19/18 11:50	12/19/18 17:31	108-90-7	
Chloroethane	**<0.045**	mg/kg	0.87	0.045	1	12/19/18 11:50	12/19/18 17:31	75-00-3	
Chloroform	**<0.043**	mg/kg	0.087	0.043	1	12/19/18 11:50	12/19/18 17:31	67-66-3	
Chloromethane	**<0.021**	mg/kg	0.35	0.021	1	12/19/18 11:50	12/19/18 17:31	74-87-3	
Dibromochloromethane	**<0.010**	mg/kg	0.35	0.010	1	12/19/18 11:50	12/19/18 17:31	124-48-1	
Dichlorodifluoromethane	**<0.028**	mg/kg	0.35	0.028	1	12/19/18 11:50	12/19/18 17:31	75-71-8	
Ethylbenzene	**<0.0047**	mg/kg	0.087	0.0047	1	12/19/18 11:50	12/19/18 17:31	100-41-4	
Hexachloro-1,3-butadiene	**<0.021**	mg/kg	0.43	0.021	1	12/19/18 11:50	12/19/18 17:31	87-68-3	
Methyl-tert-butyl ether	**<0.010**	mg/kg	0.087	0.010	1	12/19/18 11:50	12/19/18 17:31	1634-04-4	
Methylene Chloride	**<0.16**	mg/kg	0.35	0.16	1	12/19/18 11:50	12/19/18 17:31	75-09-2	
Naphthalene	**<0.081**	mg/kg	0.35	0.081	1	12/19/18 11:50	12/19/18 17:31	91-20-3	
Styrene	**<0.0039**	mg/kg	0.087	0.0039	1	12/19/18 11:50	12/19/18 17:31	100-42-5	
Tetrachloroethene	**<0.030**	mg/kg	0.087	0.030	1	12/19/18 11:50	12/19/18 17:31	127-18-4	
Tetrahydrofuran	**<0.13**	mg/kg	3.5	0.13	1	12/19/18 11:50	12/19/18 17:31	109-99-9	
Toluene	**<0.021**	mg/kg	0.087	0.021	1	12/19/18 11:50	12/19/18 17:31	108-88-3	
Trichloroethene	**<0.013**	mg/kg	0.087	0.013	1	12/19/18 11:50	12/19/18 17:31	79-01-6	
Trichlorofluoromethane	**<0.15**	mg/kg	0.35	0.15	1	12/19/18 11:50	12/19/18 17:31	75-69-4	
Vinyl acetate	**<0.010**	mg/kg	0.87	0.010	1	12/19/18 11:50	12/19/18 17:31	108-05-4	
Vinyl chloride	**<0.017**	mg/kg	0.035	0.017	1	12/19/18 11:50	12/19/18 17:31	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB204-S-15' **Lab ID: 10458888008** Collected: 12/13/18 10:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.014**	mg/kg	0.087	0.014	1	12/19/18 11:50	12/19/18 17:31	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.087	0.012	1	12/19/18 11:50	12/19/18 17:31	10061-01-5	
m&p-Xylene	**<0.011**	mg/kg	0.17	0.011	1	12/19/18 11:50	12/19/18 17:31	179601-23-1	
o-Xylene	**<0.020**	mg/kg	0.087	0.020	1	12/19/18 11:50	12/19/18 17:31	95-47-6	
trans-1,2-Dichloroethene	**<0.041**	mg/kg	0.087	0.041	1	12/19/18 11:50	12/19/18 17:31	156-60-5	
trans-1,3-Dichloropropene	**<0.012**	mg/kg	0.087	0.012	1	12/19/18 11:50	12/19/18 17:31	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	121	%.	75-125		1	12/19/18 11:50	12/19/18 17:31	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	12/19/18 11:50	12/19/18 17:31	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	12/19/18 11:50	12/19/18 17:31	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB205-S-5' **Lab ID: 10458888009** Collected: 12/13/18 09:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.7**	%	0.10	0.10	1		12/19/18 15:46		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.061	0.029	1	12/19/18 11:50	12/19/18 17:50	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.25	0.011	1	12/19/18 11:50	12/19/18 17:50	79-34-5	
1,1,2-Trichloroethane	**<0.0073**	mg/kg	0.061	0.0073	1	12/19/18 11:50	12/19/18 17:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.071**	mg/kg	0.61	0.071	1	12/19/18 11:50	12/19/18 17:50	76-13-1	
1,1-Dichloroethane	**<0.0069**	mg/kg	0.061	0.0069	1	12/19/18 11:50	12/19/18 17:50	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.61	0.018	1	12/19/18 11:50	12/19/18 17:50	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.061	0.014	1	12/19/18 11:50	12/19/18 17:50	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.061	0.012	1	12/19/18 11:50	12/19/18 17:50	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0064**	mg/kg	0.061	0.0064	1	12/19/18 11:50	12/19/18 17:50	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.061	0.0025	1	12/19/18 11:50	12/19/18 17:50	95-50-1	
1,2-Dichloroethane	**<0.0067**	mg/kg	0.061	0.0067	1	12/19/18 11:50	12/19/18 17:50	107-06-2	
1,3,5-Trimethylbenzene	**<0.0098**	mg/kg	0.061	0.0098	1	12/19/18 11:50	12/19/18 17:50	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.061	0.0022	1	12/19/18 11:50	12/19/18 17:50	541-73-1	
1,4-Dichlorobenzene	**<0.0038**	mg/kg	0.061	0.0038	1	12/19/18 11:50	12/19/18 17:50	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	12/19/18 11:50	12/19/18 17:50	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	12/19/18 11:50	12/19/18 17:50	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	12/19/18 11:50	12/19/18 17:50	108-10-1	
Acetone	**<0.38**	mg/kg	1.2	0.38	1	12/19/18 11:50	12/19/18 17:50	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	12/19/18 11:50	12/19/18 17:50	71-43-2	
Bromodichloromethane	**<0.021**	mg/kg	0.061	0.021	1	12/19/18 11:50	12/19/18 17:50	75-27-4	
Bromoform	**<0.093**	mg/kg	0.25	0.093	1	12/19/18 11:50	12/19/18 17:50	75-25-2	
Bromomethane	**<0.072**	mg/kg	0.61	0.072	1	12/19/18 11:50	12/19/18 17:50	74-83-9	
Carbon tetrachloride	**<0.029**	mg/kg	0.25	0.029	1	12/19/18 11:50	12/19/18 17:50	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.061	0.0035	1	12/19/18 11:50	12/19/18 17:50	108-90-7	
Chloroethane	**<0.032**	mg/kg	0.61	0.032	1	12/19/18 11:50	12/19/18 17:50	75-00-3	
Chloroform	**<0.031**	mg/kg	0.061	0.031	1	12/19/18 11:50	12/19/18 17:50	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	12/19/18 11:50	12/19/18 17:50	74-87-3	
Dibromochloromethane	**<0.0071**	mg/kg	0.25	0.0071	1	12/19/18 11:50	12/19/18 17:50	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	12/19/18 11:50	12/19/18 17:50	75-71-8	
Ethylbenzene	**<0.0033**	mg/kg	0.061	0.0033	1	12/19/18 11:50	12/19/18 17:50	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	12/19/18 11:50	12/19/18 17:50	87-68-3	
Methyl-tert-butyl ether	**<0.0073**	mg/kg	0.061	0.0073	1	12/19/18 11:50	12/19/18 17:50	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	12/19/18 11:50	12/19/18 17:50	75-09-2	
Naphthalene	**<0.057**	mg/kg	0.25	0.057	1	12/19/18 11:50	12/19/18 17:50	91-20-3	
Styrene	**<0.0028**	mg/kg	0.061	0.0028	1	12/19/18 11:50	12/19/18 17:50	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.061	0.022	1	12/19/18 11:50	12/19/18 17:50	127-18-4	
Tetrahydrofuran	**<0.089**	mg/kg	2.5	0.089	1	12/19/18 11:50	12/19/18 17:50	109-99-9	
Toluene	**<0.015**	mg/kg	0.061	0.015	1	12/19/18 11:50	12/19/18 17:50	108-88-3	
Trichloroethene	**<0.0094**	mg/kg	0.061	0.0094	1	12/19/18 11:50	12/19/18 17:50	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	12/19/18 11:50	12/19/18 17:50	75-69-4	
Vinyl acetate	**<0.0071**	mg/kg	0.61	0.0071	1	12/19/18 11:50	12/19/18 17:50	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	12/19/18 11:50	12/19/18 17:50	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB205-S-5' **Lab ID: 10458888009** Collected: 12/13/18 09:45 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.061	0.010	1	12/19/18 11:50	12/19/18 17:50	156-59-2	
cis-1,3-Dichloropropene	**<0.0088**	mg/kg	0.061	0.0088	1	12/19/18 11:50	12/19/18 17:50	10061-01-5	
m&p-Xylene	**<0.0076**	mg/kg	0.12	0.0076	1	12/19/18 11:50	12/19/18 17:50	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.061	0.014	1	12/19/18 11:50	12/19/18 17:50	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.061	0.029	1	12/19/18 11:50	12/19/18 17:50	156-60-5	
trans-1,3-Dichloropropene	**<0.0085**	mg/kg	0.061	0.0085	1	12/19/18 11:50	12/19/18 17:50	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	114	%.	75-125		1	12/19/18 11:50	12/19/18 17:50	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 17:50	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1	12/19/18 11:50	12/19/18 17:50	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB205-S-15' **Lab ID: 10458888010** Collected: 12/13/18 10:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**31.7**	%	0.10	0.10	1		12/19/18 15:46		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.035**	mg/kg	0.076	0.035	1	12/19/18 11:50	12/19/18 18:09	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.013**	mg/kg	0.30	0.013	1	12/19/18 11:50	12/19/18 18:09	79-34-5	
1,1,2-Trichloroethane	**<0.0090**	mg/kg	0.076	0.0090	1	12/19/18 11:50	12/19/18 18:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.088**	mg/kg	0.76	0.088	1	12/19/18 11:50	12/19/18 18:09	76-13-1	
1,1-Dichloroethane	**<0.0085**	mg/kg	0.076	0.0085	1	12/19/18 11:50	12/19/18 18:09	75-34-3	
1,1-Dichloroethene	**<0.023**	mg/kg	0.76	0.023	1	12/19/18 11:50	12/19/18 18:09	75-35-4	
1,2,4-Trichlorobenzene	**<0.017**	mg/kg	0.076	0.017	1	12/19/18 11:50	12/19/18 18:09	120-82-1	
1,2,4-Trimethylbenzene	**<0.015**	mg/kg	0.076	0.015	1	12/19/18 11:50	12/19/18 18:09	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0080**	mg/kg	0.076	0.0080	1	12/19/18 11:50	12/19/18 18:09	106-93-4	
1,2-Dichlorobenzene	**<0.0031**	mg/kg	0.076	0.0031	1	12/19/18 11:50	12/19/18 18:09	95-50-1	
1,2-Dichloroethane	**<0.0083**	mg/kg	0.076	0.0083	1	12/19/18 11:50	12/19/18 18:09	107-06-2	
1,3,5-Trimethylbenzene	**<0.012**	mg/kg	0.076	0.012	1	12/19/18 11:50	12/19/18 18:09	108-67-8	
1,3-Dichlorobenzene	**<0.0028**	mg/kg	0.076	0.0028	1	12/19/18 11:50	12/19/18 18:09	541-73-1	
1,4-Dichlorobenzene	**<0.0047**	mg/kg	0.076	0.0047	1	12/19/18 11:50	12/19/18 18:09	106-46-7	
2-Butanone (MEK)	**<0.040**	mg/kg	0.38	0.040	1	12/19/18 11:50	12/19/18 18:09	78-93-3	
2-Hexanone	**<0.017**	mg/kg	0.38	0.017	1	12/19/18 11:50	12/19/18 18:09	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.016**	mg/kg	0.38	0.016	1	12/19/18 11:50	12/19/18 18:09	108-10-1	
Acetone	**<0.47**	mg/kg	1.5	0.47	1	12/19/18 11:50	12/19/18 18:09	67-64-1	
Benzene	**<0.0043**	mg/kg	0.030	0.0043	1	12/19/18 11:50	12/19/18 18:09	71-43-2	
Bromodichloromethane	**<0.026**	mg/kg	0.076	0.026	1	12/19/18 11:50	12/19/18 18:09	75-27-4	
Bromoform	**<0.11**	mg/kg	0.30	0.11	1	12/19/18 11:50	12/19/18 18:09	75-25-2	
Bromomethane	**<0.089**	mg/kg	0.76	0.089	1	12/19/18 11:50	12/19/18 18:09	74-83-9	
Carbon tetrachloride	**<0.036**	mg/kg	0.30	0.036	1	12/19/18 11:50	12/19/18 18:09	56-23-5	
Chlorobenzene	**<0.0043**	mg/kg	0.076	0.0043	1	12/19/18 11:50	12/19/18 18:09	108-90-7	
Chloroethane	**<0.039**	mg/kg	0.76	0.039	1	12/19/18 11:50	12/19/18 18:09	75-00-3	
Chloroform	**<0.038**	mg/kg	0.076	0.038	1	12/19/18 11:50	12/19/18 18:09	67-66-3	
Chloromethane	**<0.018**	mg/kg	0.30	0.018	1	12/19/18 11:50	12/19/18 18:09	74-87-3	
Dibromochloromethane	**<0.0088**	mg/kg	0.30	0.0088	1	12/19/18 11:50	12/19/18 18:09	124-48-1	
Dichlorodifluoromethane	**<0.025**	mg/kg	0.30	0.025	1	12/19/18 11:50	12/19/18 18:09	75-71-8	
Ethylbenzene	**<0.0041**	mg/kg	0.076	0.0041	1	12/19/18 11:50	12/19/18 18:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.018**	mg/kg	0.38	0.018	1	12/19/18 11:50	12/19/18 18:09	87-68-3	
Methyl-tert-butyl ether	**<0.0090**	mg/kg	0.076	0.0090	1	12/19/18 11:50	12/19/18 18:09	1634-04-4	
Methylene Chloride	**<0.14**	mg/kg	0.30	0.14	1	12/19/18 11:50	12/19/18 18:09	75-09-2	
Naphthalene	**<0.071**	mg/kg	0.30	0.071	1	12/19/18 11:50	12/19/18 18:09	91-20-3	
Styrene	**<0.0035**	mg/kg	0.076	0.0035	1	12/19/18 11:50	12/19/18 18:09	100-42-5	
Tetrachloroethene	**<0.027**	mg/kg	0.076	0.027	1	12/19/18 11:50	12/19/18 18:09	127-18-4	
Tetrahydrofuran	**<0.11**	mg/kg	3.0	0.11	1	12/19/18 11:50	12/19/18 18:09	109-99-9	
Toluene	**<0.018**	mg/kg	0.076	0.018	1	12/19/18 11:50	12/19/18 18:09	108-88-3	
Trichloroethene	**<0.012**	mg/kg	0.076	0.012	1	12/19/18 11:50	12/19/18 18:09	79-01-6	
Trichlorofluoromethane	**<0.13**	mg/kg	0.30	0.13	1	12/19/18 11:50	12/19/18 18:09	75-69-4	
Vinyl acetate	**<0.0088**	mg/kg	0.76	0.0088	1	12/19/18 11:50	12/19/18 18:09	108-05-4	
Vinyl chloride	**<0.015**	mg/kg	0.030	0.015	1	12/19/18 11:50	12/19/18 18:09	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease

Pace Project No.: 10458888

Sample: SB205-S-15' **Lab ID: 10458888010** Collected: 12/13/18 10:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.013**	mg/kg	0.076	0.013	1	12/19/18 11:50	12/19/18 18:09	156-59-2	
cis-1,3-Dichloropropene	**<0.011**	mg/kg	0.076	0.011	1	12/19/18 11:50	12/19/18 18:09	10061-01-5	
m&p-Xylene	**<0.0094**	mg/kg	0.15	0.0094	1	12/19/18 11:50	12/19/18 18:09	179601-23-1	
o-Xylene	**<0.018**	mg/kg	0.076	0.018	1	12/19/18 11:50	12/19/18 18:09	95-47-6	
trans-1,2-Dichloroethene	**<0.035**	mg/kg	0.076	0.035	1	12/19/18 11:50	12/19/18 18:09	156-60-5	
trans-1,3-Dichloropropene	**<0.011**	mg/kg	0.076	0.011	1	12/19/18 11:50	12/19/18 18:09	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	120	%.	75-125		1	12/19/18 11:50	12/19/18 18:09	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	12/19/18 11:50	12/19/18 18:09	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	12/19/18 11:50	12/19/18 18:09	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB-S-FD **Lab ID: 10458888011** Collected: 12/13/18 16:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**34.7**	%	0.10	0.10	1		12/19/18 15:46		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.040**	mg/kg	0.085	0.040	1	12/19/18 11:50	12/19/18 18:28	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.015**	mg/kg	0.34	0.015	1	12/19/18 11:50	12/19/18 18:28	79-34-5	
1,1,2-Trichloroethane	**<0.010**	mg/kg	0.085	0.010	1	12/19/18 11:50	12/19/18 18:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.098**	mg/kg	0.85	0.098	1	12/19/18 11:50	12/19/18 18:28	76-13-1	
1,1-Dichloroethane	**<0.0095**	mg/kg	0.085	0.0095	1	12/19/18 11:50	12/19/18 18:28	75-34-3	
1,1-Dichloroethene	**<0.025**	mg/kg	0.85	0.025	1	12/19/18 11:50	12/19/18 18:28	75-35-4	
1,2,4-Trichlorobenzene	**<0.019**	mg/kg	0.085	0.019	1	12/19/18 11:50	12/19/18 18:28	120-82-1	
1,2,4-Trimethylbenzene	**<0.017**	mg/kg	0.085	0.017	1	12/19/18 11:50	12/19/18 18:28	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0089**	mg/kg	0.085	0.0089	1	12/19/18 11:50	12/19/18 18:28	106-93-4	
1,2-Dichlorobenzene	**<0.0034**	mg/kg	0.085	0.0034	1	12/19/18 11:50	12/19/18 18:28	95-50-1	
1,2-Dichloroethane	**<0.0093**	mg/kg	0.085	0.0093	1	12/19/18 11:50	12/19/18 18:28	107-06-2	
1,3,5-Trimethylbenzene	**<0.014**	mg/kg	0.085	0.014	1	12/19/18 11:50	12/19/18 18:28	108-67-8	
1,3-Dichlorobenzene	**<0.0031**	mg/kg	0.085	0.0031	1	12/19/18 11:50	12/19/18 18:28	541-73-1	
1,4-Dichlorobenzene	**<0.0053**	mg/kg	0.085	0.0053	1	12/19/18 11:50	12/19/18 18:28	106-46-7	
2-Butanone (MEK)	**<0.045**	mg/kg	0.42	0.045	1	12/19/18 11:50	12/19/18 18:28	78-93-3	
2-Hexanone	**<0.020**	mg/kg	0.42	0.020	1	12/19/18 11:50	12/19/18 18:28	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.018**	mg/kg	0.42	0.018	1	12/19/18 11:50	12/19/18 18:28	108-10-1	
Acetone	**<0.53**	mg/kg	1.7	0.53	1	12/19/18 11:50	12/19/18 18:28	67-64-1	
Benzene	**<0.0048**	mg/kg	0.034	0.0048	1	12/19/18 11:50	12/19/18 18:28	71-43-2	
Bromodichloromethane	**<0.029**	mg/kg	0.085	0.029	1	12/19/18 11:50	12/19/18 18:28	75-27-4	
Bromoform	**<0.13**	mg/kg	0.34	0.13	1	12/19/18 11:50	12/19/18 18:28	75-25-2	
Bromomethane	**<0.099**	mg/kg	0.85	0.099	1	12/19/18 11:50	12/19/18 18:28	74-83-9	
Carbon tetrachloride	**<0.041**	mg/kg	0.34	0.041	1	12/19/18 11:50	12/19/18 18:28	56-23-5	
Chlorobenzene	**<0.0048**	mg/kg	0.085	0.0048	1	12/19/18 11:50	12/19/18 18:28	108-90-7	
Chloroethane	**<0.044**	mg/kg	0.85	0.044	1	12/19/18 11:50	12/19/18 18:28	75-00-3	
Chloroform	**<0.042**	mg/kg	0.085	0.042	1	12/19/18 11:50	12/19/18 18:28	67-66-3	
Chloromethane	**<0.020**	mg/kg	0.34	0.020	1	12/19/18 11:50	12/19/18 18:28	74-87-3	
Dibromochloromethane	**<0.0098**	mg/kg	0.34	0.0098	1	12/19/18 11:50	12/19/18 18:28	124-48-1	
Dichlorodifluoromethane	**<0.028**	mg/kg	0.34	0.028	1	12/19/18 11:50	12/19/18 18:28	75-71-8	
Ethylbenzene	**<0.0046**	mg/kg	0.085	0.0046	1	12/19/18 11:50	12/19/18 18:28	100-41-4	
Hexachloro-1,3-butadiene	**<0.021**	mg/kg	0.42	0.021	1	12/19/18 11:50	12/19/18 18:28	87-68-3	
Methyl-tert-butyl ether	**<0.010**	mg/kg	0.085	0.010	1	12/19/18 11:50	12/19/18 18:28	1634-04-4	
Methylene Chloride	**<0.16**	mg/kg	0.34	0.16	1	12/19/18 11:50	12/19/18 18:28	75-09-2	
Naphthalene	**<0.079**	mg/kg	0.34	0.079	1	12/19/18 11:50	12/19/18 18:28	91-20-3	
Styrene	**<0.0039**	mg/kg	0.085	0.0039	1	12/19/18 11:50	12/19/18 18:28	100-42-5	
Tetrachloroethene	**<0.030**	mg/kg	0.085	0.030	1	12/19/18 11:50	12/19/18 18:28	127-18-4	
Tetrahydrofuran	**<0.12**	mg/kg	3.4	0.12	1	12/19/18 11:50	12/19/18 18:28	109-99-9	
Toluene	**<0.021**	mg/kg	0.085	0.021	1	12/19/18 11:50	12/19/18 18:28	108-88-3	
Trichloroethene	**<0.013**	mg/kg	0.085	0.013	1	12/19/18 11:50	12/19/18 18:28	79-01-6	
Trichlorofluoromethane	**<0.15**	mg/kg	0.34	0.15	1	12/19/18 11:50	12/19/18 18:28	75-69-4	
Vinyl acetate	**<0.0098**	mg/kg	0.85	0.0098	1	12/19/18 11:50	12/19/18 18:28	108-05-4	
Vinyl chloride	**<0.017**	mg/kg	0.034	0.017	1	12/19/18 11:50	12/19/18 18:28	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: SB-S-FD **Lab ID: 10458888011** Collected: 12/13/18 16:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.014**	mg/kg	0.085	0.014	1	12/19/18 11:50	12/19/18 18:28	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.085	0.012	1	12/19/18 11:50	12/19/18 18:28	10061-01-5	
m&p-Xylene	**<0.011**	mg/kg	0.17	0.011	1	12/19/18 11:50	12/19/18 18:28	179601-23-1	
o-Xylene	**<0.020**	mg/kg	0.085	0.020	1	12/19/18 11:50	12/19/18 18:28	95-47-6	
trans-1,2-Dichloroethene	**<0.040**	mg/kg	0.085	0.040	1	12/19/18 11:50	12/19/18 18:28	156-60-5	
trans-1,3-Dichloropropene	**<0.012**	mg/kg	0.085	0.012	1	12/19/18 11:50	12/19/18 18:28	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-125		1	12/19/18 11:50	12/19/18 18:28	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	12/19/18 11:50	12/19/18 18:28	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	12/19/18 11:50	12/19/18 18:28	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: Trip Blank **Lab ID: 10458888012** Collected: 12/13/18 08:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.023**	mg/kg	0.050	0.023	1	12/19/18 11:50	12/19/18 14:22	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0088**	mg/kg	0.20	0.0088	1	12/19/18 11:50	12/19/18 14:22	79-34-5	
1,1,2-Trichloroethane	**<0.0060**	mg/kg	0.050	0.0060	1	12/19/18 11:50	12/19/18 14:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.058**	mg/kg	0.50	0.058	1	12/19/18 11:50	12/19/18 14:22	76-13-1	
1,1-Dichloroethane	**<0.0056**	mg/kg	0.050	0.0056	1	12/19/18 11:50	12/19/18 14:22	75-34-3	
1,1-Dichloroethene	**<0.015**	mg/kg	0.50	0.015	1	12/19/18 11:50	12/19/18 14:22	75-35-4	
1,2,4-Trichlorobenzene	**<0.011**	mg/kg	0.050	0.011	1	12/19/18 11:50	12/19/18 14:22	120-82-1	
1,2,4-Trimethylbenzene	**<0.010**	mg/kg	0.050	0.010	1	12/19/18 11:50	12/19/18 14:22	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0053**	mg/kg	0.050	0.0053	1	12/19/18 11:50	12/19/18 14:22	106-93-4	
1,2-Dichlorobenzene	**<0.0020**	mg/kg	0.050	0.0020	1	12/19/18 11:50	12/19/18 14:22	95-50-1	
1,2-Dichloroethane	**<0.0055**	mg/kg	0.050	0.0055	1	12/19/18 11:50	12/19/18 14:22	107-06-2	
1,3,5-Trimethylbenzene	**<0.0080**	mg/kg	0.050	0.0080	1	12/19/18 11:50	12/19/18 14:22	108-67-8	
1,3-Dichlorobenzene	**<0.0018**	mg/kg	0.050	0.0018	1	12/19/18 11:50	12/19/18 14:22	541-73-1	
1,4-Dichlorobenzene	**<0.0031**	mg/kg	0.050	0.0031	1	12/19/18 11:50	12/19/18 14:22	106-46-7	
2-Butanone (MEK)	**<0.027**	mg/kg	0.25	0.027	1	12/19/18 11:50	12/19/18 14:22	78-93-3	
2-Hexanone	**<0.012**	mg/kg	0.25	0.012	1	12/19/18 11:50	12/19/18 14:22	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.010**	mg/kg	0.25	0.010	1	12/19/18 11:50	12/19/18 14:22	108-10-1	
Acetone	**<0.31**	mg/kg	1.0	0.31	1	12/19/18 11:50	12/19/18 14:22	67-64-1	
Benzene	**<0.0028**	mg/kg	0.020	0.0028	1	12/19/18 11:50	12/19/18 14:22	71-43-2	
Bromodichloromethane	**<0.017**	mg/kg	0.050	0.017	1	12/19/18 11:50	12/19/18 14:22	75-27-4	
Bromoform	**<0.076**	mg/kg	0.20	0.076	1	12/19/18 11:50	12/19/18 14:22	75-25-2	
Bromomethane	**<0.058**	mg/kg	0.50	0.058	1	12/19/18 11:50	12/19/18 14:22	74-83-9	
Carbon tetrachloride	**<0.024**	mg/kg	0.20	0.024	1	12/19/18 11:50	12/19/18 14:22	56-23-5	
Chlorobenzene	**<0.0028**	mg/kg	0.050	0.0028	1	12/19/18 11:50	12/19/18 14:22	108-90-7	
Chloroethane	**<0.026**	mg/kg	0.50	0.026	1	12/19/18 11:50	12/19/18 14:22	75-00-3	
Chloroform	**<0.025**	mg/kg	0.050	0.025	1	12/19/18 11:50	12/19/18 14:22	67-66-3	
Chloromethane	**<0.012**	mg/kg	0.20	0.012	1	12/19/18 11:50	12/19/18 14:22	74-87-3	
Dibromochloromethane	**<0.0058**	mg/kg	0.20	0.0058	1	12/19/18 11:50	12/19/18 14:22	124-48-1	
Dichlorodifluoromethane	**<0.016**	mg/kg	0.20	0.016	1	12/19/18 11:50	12/19/18 14:22	75-71-8	
Ethylbenzene	**<0.0027**	mg/kg	0.050	0.0027	1	12/19/18 11:50	12/19/18 14:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.012**	mg/kg	0.25	0.012	1	12/19/18 11:50	12/19/18 14:22	87-68-3	
Methyl-tert-butyl ether	**<0.0060**	mg/kg	0.050	0.0060	1	12/19/18 11:50	12/19/18 14:22	1634-04-4	
Methylene Chloride	**<0.094**	mg/kg	0.20	0.094	1	12/19/18 11:50	12/19/18 14:22	75-09-2	
Naphthalene	**<0.047**	mg/kg	0.20	0.047	1	12/19/18 11:50	12/19/18 14:22	91-20-3	
Styrene	**<0.0023**	mg/kg	0.050	0.0023	1	12/19/18 11:50	12/19/18 14:22	100-42-5	
Tetrachloroethene	**<0.018**	mg/kg	0.050	0.018	1	12/19/18 11:50	12/19/18 14:22	127-18-4	
Tetrahydrofuran	**<0.073**	mg/kg	2.0	0.073	1	12/19/18 11:50	12/19/18 14:22	109-99-9	
Toluene	**<0.012**	mg/kg	0.050	0.012	1	12/19/18 11:50	12/19/18 14:22	108-88-3	
Trichloroethene	**<0.0077**	mg/kg	0.050	0.0077	1	12/19/18 11:50	12/19/18 14:22	79-01-6	
Trichlorofluoromethane	**<0.087**	mg/kg	0.20	0.087	1	12/19/18 11:50	12/19/18 14:22	75-69-4	
Vinyl acetate	**<0.0058**	mg/kg	0.50	0.0058	1	12/19/18 11:50	12/19/18 14:22	108-05-4	
Vinyl chloride	**<0.0098**	mg/kg	0.020	0.0098	1	12/19/18 11:50	12/19/18 14:22	75-01-4	
cis-1,2-Dichloroethene	**<0.0083**	mg/kg	0.050	0.0083	1	12/19/18 11:50	12/19/18 14:22	156-59-2	
cis-1,3-Dichloropropene	**<0.0072**	mg/kg	0.050	0.0072	1	12/19/18 11:50	12/19/18 14:22	10061-01-5	
m&p-Xylene	**<0.0062**	mg/kg	0.10	0.0062	1	12/19/18 11:50	12/19/18 14:22	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Sample: Trip Blank **Lab ID: 10458888012** Collected: 12/13/18 08:00 Received: 12/14/18 10:05 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<0.012**	mg/kg	0.050	0.012	1	12/19/18 11:50	12/19/18 14:22	95-47-6	
trans-1,2-Dichloroethene	**<0.023**	mg/kg	0.050	0.023	1	12/19/18 11:50	12/19/18 14:22	156-60-5	
trans-1,3-Dichloropropene	**<0.0070**	mg/kg	0.050	0.0070	1	12/19/18 11:50	12/19/18 14:22	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-125		1	12/19/18 11:50	12/19/18 14:22	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	12/19/18 11:50	12/19/18 14:22	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	12/19/18 11:50	12/19/18 14:22	460-00-4	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

QC Batch: 581895 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10458888001, 10458888002, 10458888003, 10458888004, 10458888005, 10458888006, 10458888007, 10458888008, 10458888009, 10458888010, 10458888011

SAMPLE DUPLICATE: 3154243

Parameter	Units	10458888002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.2	30.1	3	30	

SAMPLE DUPLICATE: 3154259

Parameter	Units	10458948003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	18.2	5	30	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

QC Batch: 581817 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10458888001, 10458888002, 10458888003, 10458888004, 10458888005, 10458888006, 10458888007, 10458888008, 10458888009, 10458888010, 10458888011, 10458888012

METHOD BLANK: 3153959 Matrix: Solid
Associated Lab Samples: 10458888001, 10458888002, 10458888003, 10458888004, 10458888005, 10458888006, 10458888007, 10458888008, 10458888009, 10458888010, 10458888011, 10458888012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	<0.023	0.050	0.023	12/19/18 14:03	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0088	0.20	0.0088	12/19/18 14:03	MN
1,1,2-Trichloroethane	mg/kg	<0.0060	0.050	0.0060	12/19/18 14:03	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.058	0.50	0.058	12/19/18 14:03	MN
1,1-Dichloroethane	mg/kg	<0.0056	0.050	0.0056	12/19/18 14:03	
1,1-Dichloroethene	mg/kg	<0.015	0.50	0.015	12/19/18 14:03	MN
1,2,4-Trichlorobenzene	mg/kg	<0.011	0.050	0.011	12/19/18 14:03	
1,2,4-Trimethylbenzene	mg/kg	<0.010	0.050	0.010	12/19/18 14:03	
1,2-Dibromoethane (EDB)	mg/kg	<0.0053	0.050	0.0053	12/19/18 14:03	
1,2-Dichlorobenzene	mg/kg	<0.0020	0.050	0.0020	12/19/18 14:03	
1,2-Dichloroethane	mg/kg	<0.0055	0.050	0.0055	12/19/18 14:03	
1,3,5-Trimethylbenzene	mg/kg	<0.0080	0.050	0.0080	12/19/18 14:03	
1,3-Dichlorobenzene	mg/kg	<0.0018	0.050	0.0018	12/19/18 14:03	
1,4-Dichlorobenzene	mg/kg	<0.0031	0.050	0.0031	12/19/18 14:03	
2-Butanone (MEK)	mg/kg	<0.027	0.25	0.027	12/19/18 14:03	
2-Hexanone	mg/kg	<0.012	0.25	0.012	12/19/18 14:03	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.010	0.25	0.010	12/19/18 14:03	
Acetone	mg/kg	<0.31	1.0	0.31	12/19/18 14:03	
Benzene	mg/kg	<0.0028	0.020	0.0028	12/19/18 14:03	
Bromodichloromethane	mg/kg	<0.017	0.050	0.017	12/19/18 14:03	
Bromoform	mg/kg	<0.076	0.20	0.076	12/19/18 14:03	
Bromomethane	mg/kg	<0.058	0.50	0.058	12/19/18 14:03	
Carbon tetrachloride	mg/kg	<0.024	0.20	0.024	12/19/18 14:03	MN
Chlorobenzene	mg/kg	<0.0028	0.050	0.0028	12/19/18 14:03	
Chloroethane	mg/kg	<0.026	0.50	0.026	12/19/18 14:03	
Chloroform	mg/kg	<0.025	0.050	0.025	12/19/18 14:03	
Chloromethane	mg/kg	<0.012	0.20	0.012	12/19/18 14:03	
cis-1,2-Dichloroethene	mg/kg	<0.0083	0.050	0.0083	12/19/18 14:03	
cis-1,3-Dichloropropene	mg/kg	<0.0072	0.050	0.0072	12/19/18 14:03	
Dibromochloromethane	mg/kg	<0.0058	0.20	0.0058	12/19/18 14:03	
Dichlorodifluoromethane	mg/kg	<0.016	0.20	0.016	12/19/18 14:03	
Ethylbenzene	mg/kg	0.010J	0.050	0.0027	12/19/18 14:03	
Hexachloro-1,3-butadiene	mg/kg	<0.012	0.25	0.012	12/19/18 14:03	
m&p-Xylene	mg/kg	0.0088J	0.10	0.0062	12/19/18 14:03	
Methyl-tert-butyl ether	mg/kg	<0.0060	0.050	0.0060	12/19/18 14:03	
Methylene Chloride	mg/kg	<0.094	0.20	0.094	12/19/18 14:03	
Naphthalene	mg/kg	<0.047	0.20	0.047	12/19/18 14:03	
o-Xylene	mg/kg	0.013J	0.050	0.012	12/19/18 14:03	
Styrene	mg/kg	<0.0023	0.050	0.0023	12/19/18 14:03	
Tetrachloroethene	mg/kg	<0.018	0.050	0.018	12/19/18 14:03	

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

METHOD BLANK: 3153959 Matrix: Solid

Associated Lab Samples: 10458888001, 10458888002, 10458888003, 10458888004, 10458888005, 10458888006, 10458888007, 10458888008, 10458888009, 10458888010, 10458888011, 10458888012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	mg/kg	<0.073	2.0	0.073	12/19/18 14:03	
Toluene	mg/kg	<0.012	0.050	0.012	12/19/18 14:03	
trans-1,2-Dichloroethene	mg/kg	<0.023	0.050	0.023	12/19/18 14:03	
trans-1,3-Dichloropropene	mg/kg	<0.0070	0.050	0.0070	12/19/18 14:03	
Trichloroethene	mg/kg	<0.0077	0.050	0.0077	12/19/18 14:03	
Trichlorofluoromethane	mg/kg	<0.087	0.20	0.087	12/19/18 14:03	
Vinyl acetate	mg/kg	<0.0058	0.50	0.0058	12/19/18 14:03	
Vinyl chloride	mg/kg	<0.0098	0.020	0.0098	12/19/18 14:03	
1,2-Dichloroethane-d4 (S)	%.	111	75-125		12/19/18 14:03	
4-Bromofluorobenzene (S)	%.	101	75-125		12/19/18 14:03	
Toluene-d8 (S)	%.	99	75-125		12/19/18 14:03	

LABORATORY CONTROL SAMPLE: 3153960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	1	0.88	88	59-125	
1,1,2,2-Tetrachloroethane	mg/kg	1	0.68	68	58-125	
1,1,2-Trichloroethane	mg/kg	1	0.79	79	64-125	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	0.84	84	65-125	
1,1-Dichloroethane	mg/kg	1	0.89	89	63-125	
1,1-Dichloroethene	mg/kg	1	0.87	87	59-125	
1,2,4-Trichlorobenzene	mg/kg	1	0.78	78	62-125	
1,2,4-Trimethylbenzene	mg/kg	1	0.72	72	59-125	
1,2-Dibromoethane (EDB)	mg/kg	1	0.78	78	64-125	
1,2-Dichlorobenzene	mg/kg	1	0.75	75	63-125	
1,2-Dichloroethane	mg/kg	1	0.82	82	57-125	
1,3,5-Trimethylbenzene	mg/kg	1	0.74	74	59-125	
1,3-Dichlorobenzene	mg/kg	1	0.77	77	64-125	
1,4-Dichlorobenzene	mg/kg	1	0.78	78	63-125	
2-Butanone (MEK)	mg/kg	5	3.7	74	48-125	
2-Hexanone	mg/kg	5	3.3	66	57-134	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	3.8	75	52-135	
Acetone	mg/kg	5	4.8	96	65-125	CH
Benzene	mg/kg	1	0.83	83	61-125	
Bromodichloromethane	mg/kg	1	0.80	80	57-125	
Bromoform	mg/kg	1	0.70	70	57-125	
Bromomethane	mg/kg	1	1.0	102	60-125	SS
Carbon tetrachloride	mg/kg	1	0.89	89	58-125	
Chlorobenzene	mg/kg	1	0.80	80	66-125	
Chloroethane	mg/kg	1	1.1	111	62-125	
Chloroform	mg/kg	1	0.80	80	59-125	
Chloromethane	mg/kg	1	0.95	95	50-125	
cis-1,2-Dichloroethene	mg/kg	1	0.81	81	61-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

LABORATORY CONTROL SAMPLE: 3153960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	mg/kg	1	0.78	78	61-125	
Dibromochloromethane	mg/kg	1	0.77	77	60-125	
Dichlorodifluoromethane	mg/kg	1	0.99	99	38-125	
Ethylbenzene	mg/kg	1	0.78	78	62-125	
Hexachloro-1,3-butadiene	mg/kg	1	0.89	89	56-125	
m&p-Xylene	mg/kg	2	1.6	81	61-125	
Methyl-tert-butyl ether	mg/kg	1	0.76	76	59-125	
Methylene Chloride	mg/kg	1	0.70	70	64-125	
Naphthalene	mg/kg	1	0.63	63	53-125	
o-Xylene	mg/kg	1	0.79	79	61-125	
Styrene	mg/kg	1	0.74	74	66-125	
Tetrachloroethene	mg/kg	1	0.79	79	67-125	
Tetrahydrofuran	mg/kg	10	9.1	91	62-125	CH
Toluene	mg/kg	1	0.70	70	61-125	
trans-1,2-Dichloroethene	mg/kg	1	0.83	83	64-125	
trans-1,3-Dichloropropene	mg/kg	1	0.78	78	56-125	
Trichloroethene	mg/kg	1	0.80	80	67-125	
Trichlorofluoromethane	mg/kg	1	1.1	114	65-125	
Vinyl acetate	mg/kg	1	0.80	80	52-125	
Vinyl chloride	mg/kg	1	0.95	95	57-125	
1,2-Dichloroethane-d4 (S)	%.			106	75-125	
4-Bromofluorobenzene (S)	%.			103	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153961 3153962

Parameter	Units	10458888002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	mg/kg	<0.034	1.4	1.4	1.6	1.4	113	100	56-148	12	30	
1,1,2,2-Tetrachloroethane	mg/kg	<0.013	1.4	1.4	1.4	1.4	100	98	36-150	2	30	
1,1,2-Trichloroethane	mg/kg	<0.0087	1.4	1.4	1.6	1.4	113	100	67-148	12	30	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.085	1.4	1.4	1.4	1.3	97	90	60-142	7	30	
1,1-Dichloroethane	mg/kg	<0.0082	1.4	1.4	1.6	1.5	114	105	57-140	9	30	
1,1-Dichloroethene	mg/kg	<0.022	1.4	1.4	1.4	1.4	97	95	59-139	2	30	
1,2,4-Trichlorobenzene	mg/kg	<0.016	1.4	1.4	1.4	1.4	101	100	71-149	0	30	
1,2,4-Trimethylbenzene	mg/kg	<0.015	1.4	1.4	1.4	1.3	101	94	67-149	7	30	
1,2-Dibromoethane (EDB)	mg/kg	<0.0077	1.4	1.4	1.6	1.6	111	109	67-147	2	30	
1,2-Dichlorobenzene	mg/kg	<0.0029	1.4	1.4	1.5	1.4	105	98	70-142	6	30	
1,2-Dichloroethane	mg/kg	<0.0080	1.4	1.4	1.6	1.4	108	99	58-132	9	30	
1,3,5-Trimethylbenzene	mg/kg	<0.012	1.4	1.4	1.4	1.4	101	94	71-146	6	30	
1,3-Dichlorobenzene	mg/kg	<0.0027	1.4	1.4	1.5	1.5	107	101	71-142	5	30	
1,4-Dichlorobenzene	mg/kg	<0.0045	1.4	1.4	1.5	1.4	102	96	68-142	6	30	
2-Butanone (MEK)	mg/kg	<0.039	7.2	7.2	7.7	6.8	107	95	51-150	12	30	
2-Hexanone	mg/kg	<0.017	7.2	7.2	7.2	6.9	101	96	57-150	5	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153961 3153962

Parameter	Units	10458888002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.015	7.2	7.2	8.2	7.8	115	109	63-150	5	30	
Acetone	mg/kg	0.99J	7.2	7.2	7.3	7.9	88	96	54-150	8	30	CH
Benzene	mg/kg	<0.0041	1.4	1.4	1.5	1.4	107	101	65-135	6	30	
Bromodichloromethane	mg/kg	<0.025	1.4	1.4	1.5	1.4	106	99	59-148	6	30	
Bromoform	mg/kg	<0.11	1.4	1.4	1.5	1.3	105	93	57-145	11	30	
Bromomethane	mg/kg	<0.085	1.4	1.4	1.7	1.6	120	110	51-129	9	30	SS
Carbon tetrachloride	mg/kg	<0.035	1.4	1.4	1.6	1.4	112	100	55-144	11	30	
Chlorobenzene	mg/kg	<0.0041	1.4	1.4	1.5	1.4	107	97	70-142	9	30	
Chloroethane	mg/kg	<0.038	1.4	1.4	2.0	1.6	139	113	61-135	20	30	M1
Chloroform	mg/kg	<0.036	1.4	1.4	1.5	1.5	106	103	58-135	3	30	
Chloromethane	mg/kg	<0.018	1.4	1.4	1.5	1.4	102	98	37-125	4	30	
cis-1,2-Dichloroethene	mg/kg	<0.012	1.4	1.4	1.6	1.4	110	98	60-138	12	30	
cis-1,3-Dichloropropene	mg/kg	<0.010	1.4	1.4	1.5	1.4	103	100	62-142	3	30	
Dibromochloromethane	mg/kg	<0.0085	1.4	1.4	1.6	1.5	110	101	65-141	8	30	
Dichlorodifluoromethane	mg/kg	<0.024	1.4	1.4	1.3	1.2	88	84	30-125	4	30	
Ethylbenzene	mg/kg	<0.0040	1.4	1.4	1.5	1.4	106	97	72-138	9	30	
Hexachloro-1,3-butadiene	mg/kg	<0.018	1.4	1.4	1.6	1.6	112	111	38-150	1	30	
m&p-Xylene	mg/kg	<0.0090	2.8	2.8	3.2	2.8	110	99	74-142	11	30	
Methyl-tert-butyl ether	mg/kg	<0.0087	1.4	1.4	1.5	1.4	105	99	63-139	6	30	
Methylene Chloride	mg/kg	<0.14	1.4	1.4	1.2	1.1	79	73	58-135	8	30	
Naphthalene	mg/kg	<0.068	1.4	1.4	1.3	1.3	91	90	63-150	1	30	
o-Xylene	mg/kg	<0.017	1.4	1.4	1.5	1.4	106	96	74-141	10	30	
Styrene	mg/kg	<0.0033	1.4	1.4	1.5	1.4	102	99	72-146	3	30	
Tetrachloroethene	mg/kg	<0.026	1.4	1.4	1.4	1.4	101	98	70-150	3	30	
Tetrahydrofuran	mg/kg	<0.11	14.3	14.4	23.2	16.3	162	113	62-150	35	30	CH, M1,R1
Toluene	mg/kg	<0.018	1.4	1.4	1.4	1.3	100	94	65-142	6	30	
trans-1,2-Dichloroethene	mg/kg	<0.034	1.4	1.4	1.4	1.4	100	96	55-141	4	30	
trans-1,3-Dichloropropene	mg/kg	<0.010	1.4	1.4	1.6	1.5	112	102	57-147	9	30	
Trichloroethene	mg/kg	<0.011	1.4	1.4	1.3	1.3	93	90	62-150	3	30	
Trichlorofluoromethane	mg/kg	<0.13	1.4	1.4	1.8	1.5	122	106	51-150	14	30	
Vinyl acetate	mg/kg	<0.0085	1.4	1.4	1.6	1.6	114	109	30-150	4	30	
Vinyl chloride	mg/kg	<0.014	1.4	1.4	1.4	1.4	101	95	45-132	5	30	
1,2-Dichloroethane-d4 (S)	%.						110	107	75-125			
4-Bromofluorobenzene (S)	%.						100	101	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	Freeman,WA-Cenex Harvest Lease
Pace Project No.:	10458888

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

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METHOD CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman,WA-Cenex Harvest Lease
Pace Project No.: 10458888

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10458888001	**SB201-S-5'**	ASTM D2974	581895		
10458888002	**SB201-S-15'**	ASTM D2974	581895		
10458888003	**SB202-S-5'**	ASTM D2974	581895		
10458888004	**SB202-S-15'**	ASTM D2974	581895		
10458888005	**SB203-S-5'**	ASTM D2974	581895		
10458888006	**SB203-S-15'**	ASTM D2974	581895		
10458888007	**SB204-S-5'**	ASTM D2974	581895		
10458888008	**SB204-S-15'**	ASTM D2974	581895		
10458888009	**SB205-S-5'**	ASTM D2974	581895		
10458888010	**SB205-S-15'**	ASTM D2974	581895		
10458888011	**SB-S-FD**	ASTM D2974	581895		
10458888001	**SB201-S-5'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888002	**SB201-S-15'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888003	**SB202-S-5'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888004	**SB202-S-15'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888005	**SB203-S-5'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888006	**SB203-S-15'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888007	**SB204-S-5'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888008	**SB204-S-15'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888009	**SB205-S-5'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888010	**SB205-S-15'**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888011	**SB-S-FD**	EPA 5035/5030B	581817	EPA 8260B	581841
10458888012	**Trip Blank**	EPA 5035/5030B	581817	EPA 8260B	581841

REPORT OF LABORATORY ANALYSIS

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: UPRR	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Theriault (atheria@up.com)
Address: 1400 W. 52nd Ave.	Copy To: Steve Demus, ~~Lindsey Baumann~~ Jon Esp	Company: UPRR
Denver, CO 80221	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email: atheria@up.com	Purchase Order #	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman, WA - Cenex Harvest Lease	Pace Project Manager: Jennifer Gross
Requested Due Date: 24 Hr / 3 Day / 10 Day	Project #:	Pace Profile #: 36447 / 4

Regulatory Agency:

State / Location: WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

Requested Analysis Filtered (Y/N): 6020 Dissolved Iron (Field Filtered) — Y

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Collected Start DATE (2018)	Start TIME	End DATE	End TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6020 Total Iron	6020 Dissolved Iron (Field Filtered)	SM4500P-E Total Phosphorus	Dry Weight		Pace Project No./Lab I.D.
1	SB201-S-5'	SL	G	12/13	1230	–	–	–	3	X					X		X				X		001
2	SB201-S-15'	↓	↓	↓	1245	↓	↓	↓	9	↓					↓		↓				↓		MS/MSD 002
3	SB202-S-5'				1145				3														003
4	SB202-S-15'				1200				3														004
5	SB203-S-5'				1100				3														005
6	SB203-S-15'				1115				3														006
7	SB204-S-5'				1030				3														007
8	SB204-S-15'				1045				3														008
9	SB205-S-5'				945				3														009
10	SB205-S-15'				1000				3														010
11	SB-S-FD		↓	↓	1600	↓	↓	↓	3	↓											↓		011
12	Trip Blank	↓	–	–	800	–	–	–	2						↓		↓						012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Field filtered by client	JE / Jacobs	12/13/18	1500	[signature] / Pace	12/13/18	1805	3.0	Y	N	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed: 12/13/18

WO#: 10458888

10458888

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR

Project #:

WO#: 10458888

PM: JMG **Due Date:** 12/21/18
CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 448677899648

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☒ G87A9155100842

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.0 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** TNC **Date and Initials of Person Examining Contents:** TL 12/14/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Sample Volume? Triple Volume Provided for MS/MSD (if more than 10 samples)?	☒ Yes ☐ Yes	☐ No ☒ No	☐ N/A	8.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		9.
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) ,Dioxin and PFAS *If adding preservative to a container it must be added to associated field and equipment blanks (verify with PM first)	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
3 Trip Blanks Present? Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): NA 090418-3 TL 12/14/18	☐ Yes ☐ Yes	☒ No ☐ No	☒ N/A ☒ N/A	15.

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1336	Temp: 3.0	Corrected Temp: 3.0
Time: 1356	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 12/14/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Labeled by: TL

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

December 26, 2018

David Hodson
CH2M Hill
150 Spear St
Suite 750
San Francisco, CA 94105

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, CH2M Hill
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

Pace Analytical
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CERTIFICATIONS

Project:	1497 Freeman WA-Grain Handling
Pace Project No.:	10459469

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10459469001	**Freeman Primary-GW-121918**	Water	12/19/18 12:00	12/20/18 10:05

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10459469001	**Freeman Primary-GW-121918**	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10459469

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10459469001	**Freeman Primary-GW-121918**					
EPA 8260B	Carbon tetrachloride	23.0	ug/L	0.50	12/21/18 21:10	
EPA 8260B	Chloroform	1.1	ug/L	1.0	12/21/18 21:10	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: December 26, 2018

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 582305

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- BLANK (Lab ID: 3156292)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- Freeman Primary-GW-121918 (Lab ID: 10459469001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3156293)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: December 26, 2018

Analyte Comments:

QC Batch: 582305

N2: The lab does not hold NELAC/TNI accreditation for this parameter.

- LCS (Lab ID: 3156293)
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3156343)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3156344)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Sample: Freeman Primary-GW-121918 **Lab ID: 10459469001** Collected: 12/19/18 12:00 Received: 12/20/18 10:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		12/21/18 21:10	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		12/21/18 21:10	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		12/21/18 21:10	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		12/21/18 21:10	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		12/21/18 21:10	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		12/21/18 21:10	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		12/21/18 21:10	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		12/21/18 21:10	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		12/21/18 21:10	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		12/21/18 21:10	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		12/21/18 21:10	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	0.50	0.20	1		12/21/18 21:10	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		12/21/18 21:10	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		12/21/18 21:10	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		12/21/18 21:10	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		12/21/18 21:10	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		12/21/18 21:10	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		12/21/18 21:10	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	0.50	0.12	1		12/21/18 21:10	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		12/21/18 21:10	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		12/21/18 21:10	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		12/21/18 21:10	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		12/21/18 21:10	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		12/21/18 21:10	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		12/21/18 21:10	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		12/21/18 21:10	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		12/21/18 21:10	95-49-8	
2-Hexanone	**<0.88**	ug/L	5.0	0.88	1		12/21/18 21:10	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		12/21/18 21:10	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		12/21/18 21:10	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		12/21/18 21:10	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		12/21/18 21:10	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		12/21/18 21:10	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		12/21/18 21:10	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		12/21/18 21:10	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		12/21/18 21:10	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		12/21/18 21:10	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		12/21/18 21:10	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		12/21/18 21:10	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		12/21/18 21:10	75-15-0	
Carbon tetrachloride	**23.0**	ug/L	0.50	0.19	1		12/21/18 21:10	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		12/21/18 21:10	108-90-7	
Chloroethane	**<0.49**	ug/L	4.0	0.49	1		12/21/18 21:10	75-00-3	
Chloroform	**1.1**	ug/L	1.0	0.45	1		12/21/18 21:10	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		12/21/18 21:10	74-87-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Sample: Freeman Primary-GW-121918 **Lab ID: 10459469001** Collected: 12/19/18 12:00 Received: 12/20/18 10:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		12/21/18 21:10	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		12/21/18 21:10	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		12/21/18 21:10	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		12/21/18 21:10	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		12/21/18 21:10	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		12/21/18 21:10	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		12/21/18 21:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		12/21/18 21:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		12/21/18 21:10	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		12/21/18 21:10	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		12/21/18 21:10	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		12/21/18 21:10	91-20-3	
Styrene	**<0.19**	ug/L	0.50	0.19	1		12/21/18 21:10	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		12/21/18 21:10	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		12/21/18 21:10	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		12/21/18 21:10	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		12/21/18 21:10	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		12/21/18 21:10	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		12/21/18 21:10	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		12/21/18 21:10	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		12/21/18 21:10	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		12/21/18 21:10	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		12/21/18 21:10	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		12/21/18 21:10	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	0.50	0.24	1		12/21/18 21:10	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		12/21/18 21:10	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		12/21/18 21:10	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		12/21/18 21:10	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		12/21/18 21:10	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		12/21/18 21:10	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		12/21/18 21:10	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		12/21/18 21:10	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		12/21/18 21:10	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		12/21/18 21:10	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		12/21/18 21:10	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1		12/21/18 21:10	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		12/21/18 21:10	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		12/21/18 21:10	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

QC Batch: 582305 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10459469001

METHOD BLANK: 3156292 | Matrix: Water
Associated Lab Samples: 10459469001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	12/21/18 12:47	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	12/21/18 12:47	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	12/21/18 12:47	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	12/21/18 12:47	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	12/21/18 12:47	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	12/21/18 12:47	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	12/21/18 12:47	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	12/21/18 12:47	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	12/21/18 12:47	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	12/21/18 12:47	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	12/21/18 12:47	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	12/21/18 12:47	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	12/21/18 12:47	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	12/21/18 12:47	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	12/21/18 12:47	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	12/21/18 12:47	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	12/21/18 12:47	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	12/21/18 12:47	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	12/21/18 12:47	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	12/21/18 12:47	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	12/21/18 12:47	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	12/21/18 12:47	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	12/21/18 12:47	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	12/21/18 12:47	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	12/21/18 12:47	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	12/21/18 12:47	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	12/21/18 12:47	
2-Hexanone	ug/L	<0.88	5.0	0.88	12/21/18 12:47	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	12/21/18 12:47	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	12/21/18 12:47	
Acetone	ug/L	<9.2	20.0	9.2	12/21/18 12:47	
Acrolein	ug/L	<1.2	10.0	1.2	12/21/18 12:47	
Acrylonitrile	ug/L	<0.91	10.0	0.91	12/21/18 12:47	
Benzene	ug/L	<0.10	0.50	0.10	12/21/18 12:47	
Bromobenzene	ug/L	<0.21	0.50	0.21	12/21/18 12:47	
Bromochloromethane	ug/L	<0.27	1.0	0.27	12/21/18 12:47	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	12/21/18 12:47	
Bromoform	ug/L	<0.80	4.0	0.80	12/21/18 12:47	
Bromomethane	ug/L	<1.8	4.0	1.8	12/21/18 12:47	
Carbon disulfide	ug/L	<0.078	1.0	0.078	12/21/18 12:47	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	12/21/18 12:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

METHOD BLANK: 3156292 Matrix: Water
Associated Lab Samples: 10459469001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	12/21/18 12:47	
Chloroethane	ug/L	<0.49	4.0	0.49	12/21/18 12:47	MN
Chloroform	ug/L	<0.45	1.0	0.45	12/21/18 12:47	
Chloromethane	ug/L	<0.16	4.0	0.16	12/21/18 12:47	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	12/21/18 12:47	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	12/21/18 12:47	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	12/21/18 12:47	
Dibromomethane	ug/L	<0.16	1.0	0.16	12/21/18 12:47	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	12/21/18 12:47	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	12/21/18 12:47	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	12/21/18 12:47	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	12/21/18 12:47	
Ethylbenzene	ug/L	<0.14	0.50	0.14	12/21/18 12:47	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	12/21/18 12:47	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	12/21/18 12:47	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	12/21/18 12:47	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	12/21/18 12:47	
Methylene Chloride	ug/L	<0.98	4.0	0.98	12/21/18 12:47	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	12/21/18 12:47	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	12/21/18 12:47	
Naphthalene	ug/L	<0.48	1.0	0.48	12/21/18 12:47	
o-Xylene	ug/L	<0.16	0.50	0.16	12/21/18 12:47	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	12/21/18 12:47	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	12/21/18 12:47	
Styrene	ug/L	<0.19	0.50	0.19	12/21/18 12:47	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	12/21/18 12:47	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	12/21/18 12:47	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	12/21/18 12:47	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	12/21/18 12:47	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	12/21/18 12:47	
Toluene	ug/L	<0.083	0.50	0.083	12/21/18 12:47	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	12/21/18 12:47	
trans-1,3-Dichloropropene	ug/L	<0.18	4.0	0.18	12/21/18 12:47	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	12/21/18 12:47	
Trichloroethene	ug/L	<0.15	0.40	0.15	12/21/18 12:47	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	12/21/18 12:47	
Vinyl acetate	ug/L	<1.1	10.0	1.1	12/21/18 12:47	
Vinyl chloride	ug/L	<0.092	0.20	0.092	12/21/18 12:47	
Xylene (Total)	ug/L	<0.31	1.5	0.31	12/21/18 12:47	
1,2-Dichloroethane-d4 (S)	%.	96	75-125		12/21/18 12:47	
4-Bromofluorobenzene (S)	%.	98	75-125		12/21/18 12:47	
Toluene-d8 (S)	%.	102	75-125		12/21/18 12:47	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

LABORATORY CONTROL SAMPLE: 3156293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.5	97	75-125	
1,1,1-Trichloroethane	ug/L	20	18.9	94	75-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	96	75-125	
1,1,2-Trichloroethane	ug/L	20	20.2	101	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.6	98	72-125	
1,1-Dichloroethane	ug/L	20	18.4	92	75-125	
1,1-Dichloroethene	ug/L	20	17.1	86	73-125	
1,1-Dichloropropene	ug/L	20	17.9	89	73-125	
1,2,3-Trichlorobenzene	ug/L	20	19.6	98	72-130	
1,2,3-Trichloropropane	ug/L	20	18.2	91	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.6	98	75-125	
1,2,4-Trimethylbenzene	ug/L	20	18.9	94	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	44.3	89	64-133	
1,2-Dibromoethane (EDB)	ug/L	20	17.9	89	75-125	
1,2-Dichlorobenzene	ug/L	20	20.0	100	75-125	
1,2-Dichloroethane	ug/L	20	17.8	89	75-125	
1,2-Dichloroethene (Total)	ug/L	40	34.4	86	75-125	N2
1,2-Dichloropropane	ug/L	20	18.8	94	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.8	94	75-125	
1,3-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,3-Dichloropropane	ug/L	20	19.8	99	75-125	
1,4-Dichlorobenzene	ug/L	20	19.3	97	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	359	90	75-125	
2,2,4-Trimethylpentane	ug/L	20	14.3	72	64-130	N2
2,2-Dichloropropane	ug/L	20	19.7	98	68-129	
2-Butanone (MEK)	ug/L	100	86.1	86	65-126	
2-Chlorotoluene	ug/L	20	21.2	106	75-125	
2-Hexanone	ug/L	100	84.3	84	75-134	
4-Chlorotoluene	ug/L	20	19.0	95	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	91.4	91	75-131	
Acetone	ug/L	100	96.9	97	68-150	
Acrolein	ug/L	200	184	92	63-149	
Acrylonitrile	ug/L	202	173	86	75-125	
Benzene	ug/L	20	17.4	87	75-125	
Bromobenzene	ug/L	20	19.4	97	75-125	
Bromochloromethane	ug/L	20	19.3	96	75-125	
Bromodichloromethane	ug/L	20	22.1	110	75-125	
Bromoform	ug/L	20	20.2	101	70-125	
Bromomethane	ug/L	20	15.6	78	30-145	
Carbon disulfide	ug/L	20	13.5	68	67-125	
Carbon tetrachloride	ug/L	20	19.2	96	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	19.5	98	73-131	
Chloroform	ug/L	20	17.8	89	75-125	
Chloromethane	ug/L	20	19.4	97	52-132	
cis-1,2-Dichloroethene	ug/L	20	17.5	87	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.7	93	75-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

LABORATORY CONTROL SAMPLE: 3156293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.9	99	75-125	
Dibromomethane	ug/L	20	21.1	105	75-125	
Dichlorodifluoromethane	ug/L	20	21.9	109	64-127	
Dichlorofluoromethane	ug/L	20	19.7	98	75-125	N2
Diisopropyl ether	ug/L	20	16.5	82	75-125	
Ethyl-tert-butyl ether	ug/L	20	15.1	75	75-125	
Ethylbenzene	ug/L	20	18.4	92	75-125	
Hexachloro-1,3-butadiene	ug/L	20	22.5	113	75-130	
Isopropylbenzene (Cumene)	ug/L	20	18.5	93	75-125	
m&p-Xylene	ug/L	40	36.8	92	75-125	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	17.3	86	72-125	
n-Butylbenzene	ug/L	20	18.2	91	75-125	
n-Propylbenzene	ug/L	20	18.6	93	75-125	
Naphthalene	ug/L	20	17.2	86	61-136	
o-Xylene	ug/L	20	18.8	94	75-125	
p-Isopropyltoluene	ug/L	20	18.1	90	75-125	
sec-Butylbenzene	ug/L	20	18.0	90	75-125	
Styrene	ug/L	20	18.0	90	75-125	
tert-Amylmethyl ether	ug/L	20	15.1	75	75-125	
tert-Butyl Alcohol	ug/L	200	173	86	75-125	
tert-Butylbenzene	ug/L	20	18.2	91	75-125	
Tetrachloroethene	ug/L	20	18.8	94	75-125	
Tetrahydrofuran	ug/L	200	198	99	64-150	
Toluene	ug/L	20	19.0	95	75-125	
trans-1,2-Dichloroethene	ug/L	20	16.9	85	75-125	
trans-1,3-Dichloropropene	ug/L	20	16.5	83	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50.4	52.1	103	57-126	
Trichloroethene	ug/L	20	19.5	98	75-125	
Trichlorofluoromethane	ug/L	20	22.0	110	74-126	
Vinyl acetate	ug/L	20	16.2	81	72-129	
Vinyl chloride	ug/L	20	19.2	96	71-130	
Xylene (Total)	ug/L	60	55.6	93	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3156343 3156344

Parameter	Units	10459627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	21.1	21.0	106	105	75-125	1	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	22.3	21.3	111	106	75-129	5	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.9	19.4	105	97	75-125	7	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	21.3	21.1	107	106	75-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3156343 3156344

Parameter	Units	10459627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	23.3	22.4	117	112	75-136	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.1	20.3	105	101	75-125	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.7	19.6	103	98	75-127	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.0	20.5	105	103	75-129	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.8	20.3	109	102	72-137	7	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	18.0	95	90	75-125	6	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.2	20.6	106	103	69-131	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.5	19.7	102	97	71-125	4	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	47.9	45.2	96	90	61-127	6	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.9	18.7	94	93	75-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.8	20.5	104	103	75-125	2	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	18.7	18.4	93	92	69-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	40.0	38.1	100	95	75-125	5	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	20.4	19.7	102	98	75-125	4	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	19.6	102	98	75-125	4	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.2	20.9	106	104	75-125	2	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.1	20.5	105	103	75-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.5	20.2	102	101	74-125	1	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	393	371	98	93	67-128	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	16.0	15.3	80	77	65-150	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	23.5	22.3	117	111	65-136	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	90.4	89.3	90	89	59-125	1	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.7	21.5	113	108	73-126	5	30	
2-Hexanone	ug/L	<0.88	100	100	92.9	92.0	93	92	68-138	1	30	
4-Chlorotoluene	ug/L	<0.13	20	20	20.6	19.8	103	99	75-125	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	101	102	101	73-125	1	30	
Acetone	ug/L	<9.2	100	100	107	102	107	102	75-150	5	30	
Acrolein	ug/L	<1.2	200	200	240	200	120	100	53-150	18	30	
Acrylonitrile	ug/L	<0.91	202	202	184	177	91	88	69-127	4	30	
Benzene	ug/L	<0.10	20	20	20.2	19.1	101	95	74-125	6	30	
Bromobenzene	ug/L	<0.21	20	20	21.2	20.4	106	102	75-125	4	30	
Bromochloromethane	ug/L	<0.27	20	20	20.9	20.3	104	101	75-125	3	30	
Bromodichloromethane	ug/L	<0.22	20	20	23.1	22.7	116	114	75-125	2	30	
Bromoform	ug/L	<0.80	20	20	21.3	20.9	107	104	68-125	2	30	
Bromomethane	ug/L	<1.8	20	20	18.3	21.2	91	106	37-149	15	30	
Carbon disulfide	ug/L	0.27J	20	20	17.1	15.9	84	78	66-139	7	30	
Carbon tetrachloride	ug/L	<0.19	20	20	23.0	22.0	115	110	75-127	4	30	
Chlorobenzene	ug/L	<0.17	20	20	21.7	20.8	109	104	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	20.8	22.6	104	113	73-134	8	30	
Chloroform	ug/L	<0.45	20	20	19.7	19.0	99	95	71-125	4	30	
Chloromethane	ug/L	<0.16	20	20	18.8	23.7	94	119	58-133	23	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.0	19.3	100	96	75-125	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.1	19.9	95	100	71-125	4	30	
Dibromochloromethane	ug/L	<0.12	20	20	21.3	20.9	107	104	75-125	2	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3156343 3156344

Parameter	Units	10459627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromomethane	ug/L	<0.16	20	20	21.7	21.3	109	107	75-125	2	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.5	25.0	123	125	70-150	2	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	21.0	20.7	105	103	75-126	2	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.2	17.3	86	87	66-131	1	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.1	16.4	80	82	74-125	2	30	
Ethylbenzene	ug/L	<0.14	20	20	20.5	20.3	103	101	75-125	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	23.9	133	119	60-150	10	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	20.4	104	102	75-125	2	30	
m&p-Xylene	ug/L	<0.31	40	40	41.0	40.0	102	100	75-125	2	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	17.3	17.3	86	86	75-125	0	30	
Methylene Chloride	ug/L	<0.98	20	20	18.9	18.5	95	93	72-125	2	30	
n-Butylbenzene	ug/L	<0.24	20	20	19.9	19.4	100	97	73-140	2	30	
n-Propylbenzene	ug/L	<0.10	20	20	20.6	19.8	103	99	75-126	4	30	
Naphthalene	ug/L	<0.48	20	20	19.1	18.4	96	92	61-136	4	30	
o-Xylene	ug/L	<0.16	20	20	20.5	19.9	103	100	75-125	3	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	19.9	19.3	100	96	73-133	3	30	
sec-Butylbenzene	ug/L	<0.15	20	20	20.1	19.3	100	97	75-132	4	30	
Styrene	ug/L	<0.19	20	20	19.6	19.3	98	97	71-125	1	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	15.9	16.0	80	80	71-125	1	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	179	94	89	72-130	5	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.4	19.6	102	98	75-126	4	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.8	20.3	109	101	75-125	7	30	
Tetrahydrofuran	ug/L	<2.2	200	200	210	199	105	99	75-150	6	30	
Toluene	ug/L	<0.083	20	20	21.8	20.6	109	103	74-125	6	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.9	18.8	100	94	75-125	6	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	18.0	17.4	90	87	70-125	4	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50.4	50.4	56.9	52.6	113	104	57-125	8	30	
Trichloroethene	ug/L	<0.15	20	20	21.8	21.0	109	105	75-125	3	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	24.1	24.1	120	120	75-135	0	30	
Vinyl acetate	ug/L	<1.1	20	20	17.3	16.9	86	85	57-136	2	30	
Vinyl chloride	ug/L	<0.092	20	20	22.6	22.2	113	111	74-141	2	30	
Xylene (Total)	ug/L	<0.31	60	60	61.5	59.9	103	100	75-125	3	30	
1,2-Dichloroethane-d4 (S)	%.						96	95	75-125			
4-Bromofluorobenzene (S)	%.						100	99	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10459469

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10459469001	**Freeman Primary-GW-121918**	EPA 8260B	582305		

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CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must b

WO#: 10459469

10459469

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To: Steve Demus, Jonathan Espinoza	Company: UPRR
	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Phone: Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: *10 Day Standard*	Project #: 1497	Pace Profile #: *36447 / 4*

Regulatory Agency
State / Location
WA / Freeman

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y (6010/7470 TAL Dissolved Metals*)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE (2018)	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, **Nitrate 300.0**	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested	
1	Freeman Primary-GW-121918	WT	G	12/19	1200	—	3				X				X													001
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	12/19/18	1800	Jennifer Johnson Pace	12/20/18	10:05	5.1	Y	Y	Y
*Field filtered by client										

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Jonathan Espinoza					
SIGNATURE of SAMPLER: [signature]	DATE Signed: 12/19/18				

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: UPRR-CH2M Hill

Project #: **WO#: 10459469**

PM: JMG **Due Date:** 12/28/18

CLIENT: UPRR_CH2M

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4486 7790 8980

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 5.1 **Cooler Temp Corrected (°C):** 5.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** JJ 12/20/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Sample Volume?	☒ Yes	☐ No		
Triple Volume Provided for MS/MSD (if more than 10 samples)?	☐ Yes	☐ No	☒ N/A	8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water), Dioxin and PFAS	☒ Yes	☐ No	☐ N/A	
*If adding preservative to a container it must be added to associated field and equipment blanks (verify with PM first)				Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15. Only received two.
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): Shared with WO 10459466				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Mark Ochsner Date/Time: 06/27/18

Comments/Resolution: ~~Certs not required for 8260 2,2,4-TMP~~ or dichlorofluormethane.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 11:50	Temp: 5.1	Corrected Temp: 5.1
Time: 12:10	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:**

Note: Whenever there is a discrepancy affecting North Carolina complianc form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Labeled by: JJ

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 05, 2019

David Hodson
CH2M Hill
2020 sw 4TH aVE
#300
Portland, OR 97201

RE: Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on January 31, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	1497 Freeman,WA Grain Facility
Pace Project No.:	10462960

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10462960001	**RC-WC-013019**	Solid	01/30/19 12:30	01/31/19 09:40

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10462960001	**RC-WC-013019**	EPA 6010D	DM	7	PASI-M
		EPA 6010D	DM	7	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 7471B	BTS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D	AT1	72	PASI-M
		EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10462960001	**RC-WC-013019**					
EPA 6010D	Barium	0.95J	mg/L	1.0	02/04/19 15:00	
EPA 6010D	Arsenic	1.3J	mg/kg	6.5	02/04/19 12:57	D3,M1,R1
EPA 6010D	Barium	330	mg/kg	3.3	02/04/19 12:57	M1,R1
EPA 6010D	Chromium	10.6	mg/kg	3.3	02/04/19 12:57	M1,R1
EPA 6010D	Lead	5.2	mg/kg	3.3	02/04/19 12:57	M1,R1
EPA 7471B	Mercury	0.23	mg/kg	0.026	02/04/19 12:22	
ASTM D2974	Percent Moisture	29.8	%	0.10	02/04/19 10:38	

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 6010D**
Description: 6010D MET ICP, TCLP
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 6010D**
Description: 6010D MET ICP
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 588240

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10462960001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3183223)
  - Arsenic
  - Barium
  - Selenium
- MSD (Lab ID: 3183224)
  - Arsenic
  - Barium
  - Cadmium
  - Chromium
  - Lead
  - Selenium
  - Silver

R1: RPD value was outside control limits.

- MSD (Lab ID: 3183224)
  - Arsenic
  - Barium

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 6010D**
Description: 6010D MET ICP
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

QC Batch: 588240

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10462960001

R1: RPD value was outside control limits.

- Cadmium
- Chromium
- Lead
- Selenium
- Silver

Additional Comments:

Analyte Comments:

QC Batch: 588240

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- RC-WC-013019 (Lab ID: 10462960001)
  - Silver
  - Arsenic
  - Cadmium
  - Selenium

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 7470A**
Description: 7470A Mercury, TCLP
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 7471B**
Description: 7471B Mercury
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 8270D**
Description: 8270D MSSV
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3550 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 588126

R1: RPD value was outside control limits.
- LCSD (Lab ID: 3182817)
    - Trichlorofluoromethane

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 588126

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: February 05, 2019

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Sample: RC-WC-013019 **Lab ID: 10462960001** Collected: 01/30/19 12:30 Received: 01/31/19 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP	Analytical Method: EPA 6010D Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 02/02/19 10:28 Initial pH: 8.04; Final pH: 1.71								
Arsenic	**<0.019**	mg/L	0.50	0.019	1	02/02/19 12:38	02/04/19 15:00	7440-38-2	
Barium	**0.95J**	mg/L	1.0	0.00088	1	02/02/19 12:38	02/04/19 15:00	7440-39-3	
Cadmium	**<0.0013**	mg/L	0.050	0.0013	1	02/02/19 12:38	02/04/19 15:00	7440-43-9	
Chromium	**<0.0025**	mg/L	0.50	0.0025	1	02/02/19 12:38	02/04/19 15:00	7440-47-3	
Lead	**<0.0098**	mg/L	0.50	0.0098	1	02/02/19 12:38	02/04/19 15:00	7439-92-1	
Selenium	**<0.029**	mg/L	0.10	0.029	1	02/02/19 12:38	02/04/19 15:00	7782-49-2	
Silver	**<0.0019**	mg/L	0.10	0.0019	1	02/02/19 12:38	02/04/19 15:00	7440-22-4	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Arsenic	**1.3J**	mg/kg	6.5	1.3	5	02/01/19 09:18	02/04/19 12:57	7440-38-2	D3,M1, R1
Barium	**330**	mg/kg	3.3	0.27	5	02/01/19 09:18	02/04/19 12:57	7440-39-3	M1,R1
Cadmium	**<0.13**	mg/kg	0.98	0.13	5	02/01/19 09:18	02/04/19 12:57	7440-43-9	D3,M1, R1
Chromium	**10.6**	mg/kg	3.3	0.56	5	02/01/19 09:18	02/04/19 12:57	7440-47-3	M1,R1
Lead	**5.2**	mg/kg	3.3	0.74	5	02/01/19 09:18	02/04/19 12:57	7439-92-1	M1,R1
Selenium	**<2.1**	mg/kg	6.5	2.1	5	02/01/19 09:18	02/04/19 12:57	7782-49-2	D3,M1, R1
Silver	**<0.24**	mg/kg	3.3	0.24	5	02/01/19 09:18	02/04/19 12:57	7440-22-4	D3,M1, R1
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 02/02/19 10:28 Initial pH: 8.04; Final pH: 1.71								
Mercury	**<0.000078**	mg/L	0.00060	0.000078	1	02/02/19 16:14	02/05/19 12:24	7439-97-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.23**	mg/kg	0.026	0.010	1	02/01/19 09:39	02/04/19 12:22	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**29.8**	%	0.10	0.10	1		02/04/19 10:38		
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
1,2,4-Trichlorobenzene	**<51.6**	ug/kg	470	51.6	1	01/31/19 14:39	02/01/19 15:40	120-82-1	
1,2-Dichlorobenzene	**<49.3**	ug/kg	470	49.3	1	01/31/19 14:39	02/01/19 15:40	95-50-1	
1,2-Diphenylhydrazine	**<57.7**	ug/kg	470	57.7	1	01/31/19 14:39	02/01/19 15:40	122-66-7	
1,3-Dichlorobenzene	**<32.2**	ug/kg	470	32.2	1	01/31/19 14:39	02/01/19 15:40	541-73-1	
1,4-Dichlorobenzene	**<52.3**	ug/kg	470	52.3	1	01/31/19 14:39	02/01/19 15:40	106-46-7	
1-Methylnaphthalene	**<43.4**	ug/kg	470	43.4	1	01/31/19 14:39	02/01/19 15:40	90-12-0	
2,4,5-Trichlorophenol	**<60.5**	ug/kg	470	60.5	1	01/31/19 14:39	02/01/19 15:40	95-95-4	
2,4,6-Trichlorophenol	**<72.8**	ug/kg	470	72.8	1	01/31/19 14:39	02/01/19 15:40	88-06-2	
2,4-Dichlorophenol	**<78.5**	ug/kg	470	78.5	1	01/31/19 14:39	02/01/19 15:40	120-83-2	
2,4-Dimethylphenol	**<184**	ug/kg	470	184	1	01/31/19 14:39	02/01/19 15:40	105-67-9	
2,4-Dinitrophenol	**<219**	ug/kg	470	219	1	01/31/19 14:39	02/01/19 15:40	51-28-5	
2,4-Dinitrotoluene	**<59.8**	ug/kg	470	59.8	1	01/31/19 14:39	02/01/19 15:40	121-14-2	
2,6-Dinitrotoluene	**<62.2**	ug/kg	470	62.2	1	01/31/19 14:39	02/01/19 15:40	606-20-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1497 Freeman,WA Grain Facility

Pace Project No.: 10462960

Sample: RC-WC-013019 **Lab ID: 10462960001** Collected: 01/30/19 12:30 Received: 01/31/19 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
2-Chloronaphthalene	**<41.6**	ug/kg	470	41.6	1	01/31/19 14:39	02/01/19 15:40	91-58-7	
2-Chlorophenol	**<53.6**	ug/kg	470	53.6	1	01/31/19 14:39	02/01/19 15:40	95-57-8	
2-Methylnaphthalene	**<42.4**	ug/kg	470	42.4	1	01/31/19 14:39	02/01/19 15:40	91-57-6	
2-Methylphenol(o-Cresol)	**<29.3**	ug/kg	470	29.3	1	01/31/19 14:39	02/01/19 15:40	95-48-7	
2-Nitroaniline	**<118**	ug/kg	470	118	1	01/31/19 14:39	02/01/19 15:40	88-74-4	
2-Nitrophenol	**<57.3**	ug/kg	470	57.3	1	01/31/19 14:39	02/01/19 15:40	88-75-5	
3&4-Methylphenol(m&p Cresol)	**<26.5**	ug/kg	940	26.5	1	01/31/19 14:39	02/01/19 15:40		
3,3'-Dichlorobenzidine	**<158**	ug/kg	470	158	1	01/31/19 14:39	02/01/19 15:40	91-94-1	
3-Nitroaniline	**<51.3**	ug/kg	470	51.3	1	01/31/19 14:39	02/01/19 15:40	99-09-2	
4,6-Dinitro-2-methylphenol	**<466**	ug/kg	2420	466	1	01/31/19 14:39	02/01/19 15:40	534-52-1	
4-Bromophenylphenyl ether	**<56.0**	ug/kg	470	56.0	1	01/31/19 14:39	02/01/19 15:40	101-55-3	
4-Chloro-3-methylphenol	**<75.2**	ug/kg	470	75.2	1	01/31/19 14:39	02/01/19 15:40	59-50-7	
4-Chloroaniline	**<125**	ug/kg	470	125	1	01/31/19 14:39	02/01/19 15:40	106-47-8	
4-Chlorophenylphenyl ether	**<58.3**	ug/kg	470	58.3	1	01/31/19 14:39	02/01/19 15:40	7005-72-3	
4-Nitroaniline	**<68.7**	ug/kg	470	68.7	1	01/31/19 14:39	02/01/19 15:40	100-01-6	
4-Nitrophenol	**<91.2**	ug/kg	470	91.2	1	01/31/19 14:39	02/01/19 15:40	100-02-7	
Acenaphthene	**<50.1**	ug/kg	470	50.1	1	01/31/19 14:39	02/01/19 15:40	83-32-9	
Acenaphthylene	**<60.0**	ug/kg	470	60.0	1	01/31/19 14:39	02/01/19 15:40	208-96-8	
Anthracene	**<55.1**	ug/kg	470	55.1	1	01/31/19 14:39	02/01/19 15:40	120-12-7	
Benzo(a)anthracene	**<48.3**	ug/kg	470	48.3	1	01/31/19 14:39	02/01/19 15:40	56-55-3	
Benzo(a)pyrene	**<53.3**	ug/kg	470	53.3	1	01/31/19 14:39	02/01/19 15:40	50-32-8	
Benzo(b)fluoranthene	**<46.0**	ug/kg	470	46.0	1	01/31/19 14:39	02/01/19 15:40	205-99-2	
Benzo(g,h,i)perylene	**<50.3**	ug/kg	470	50.3	1	01/31/19 14:39	02/01/19 15:40	191-24-2	
Benzo(k)fluoranthene	**<58.7**	ug/kg	470	58.7	1	01/31/19 14:39	02/01/19 15:40	207-08-9	
Butylbenzylphthalate	**<43.0**	ug/kg	470	43.0	1	01/31/19 14:39	02/01/19 15:40	85-68-7	
Carbazole	**<39.0**	ug/kg	470	39.0	1	01/31/19 14:39	02/01/19 15:40	86-74-8	
Chrysene	**<49.6**	ug/kg	470	49.6	1	01/31/19 14:39	02/01/19 15:40	218-01-9	
Di-n-butylphthalate	**<64.4**	ug/kg	470	64.4	1	01/31/19 14:39	02/01/19 15:40	84-74-2	
Di-n-octylphthalate	**<54.6**	ug/kg	470	54.6	1	01/31/19 14:39	02/01/19 15:40	117-84-0	
Dibenz(a,h)anthracene	**<50.0**	ug/kg	470	50.0	1	01/31/19 14:39	02/01/19 15:40	53-70-3	
Dibenzofuran	**<59.5**	ug/kg	470	59.5	1	01/31/19 14:39	02/01/19 15:40	132-64-9	
Diethylphthalate	**<41.9**	ug/kg	470	41.9	1	01/31/19 14:39	02/01/19 15:40	84-66-2	
Dimethylphthalate	**<63.8**	ug/kg	470	63.8	1	01/31/19 14:39	02/01/19 15:40	131-11-3	
Fluoranthene	**<54.0**	ug/kg	470	54.0	1	01/31/19 14:39	02/01/19 15:40	206-44-0	
Fluorene	**<215**	ug/kg	470	215	1	01/31/19 14:39	02/01/19 15:40	86-73-7	
Hexachloro-1,3-butadiene	**<71.5**	ug/kg	470	71.5	1	01/31/19 14:39	02/01/19 15:40	87-68-3	
Hexachlorobenzene	**<76.6**	ug/kg	470	76.6	1	01/31/19 14:39	02/01/19 15:40	118-74-1	
Hexachloroethane	**<61.1**	ug/kg	470	61.1	1	01/31/19 14:39	02/01/19 15:40	67-72-1	
Indeno(1,2,3-cd)pyrene	**<28.3**	ug/kg	470	28.3	1	01/31/19 14:39	02/01/19 15:40	193-39-5	
Isophorone	**<36.2**	ug/kg	470	36.2	1	01/31/19 14:39	02/01/19 15:40	78-59-1	
N-Nitroso-di-n-propylamine	**<215**	ug/kg	470	215	1	01/31/19 14:39	02/01/19 15:40	621-64-7	
N-Nitrosodimethylamine	**<57.7**	ug/kg	470	57.7	1	01/31/19 14:39	02/01/19 15:40	62-75-9	
N-Nitrosodiphenylamine	**<30.5**	ug/kg	470	30.5	1	01/31/19 14:39	02/01/19 15:40	86-30-6	
Naphthalene	**<36.2**	ug/kg	470	36.2	1	01/31/19 14:39	02/01/19 15:40	91-20-3	
Nitrobenzene	**<51.7**	ug/kg	470	51.7	1	01/31/19 14:39	02/01/19 15:40	98-95-3	

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Sample: RC-WC-013019 **Lab ID: 10462960001** Collected: 01/30/19 12:30 Received: 01/31/19 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550								
Pentachlorophenol	**<275**	ug/kg	954	275	1	01/31/19 14:39	02/01/19 15:40	87-86-5	
Phenanthrene	**<54.7**	ug/kg	470	54.7	1	01/31/19 14:39	02/01/19 15:40	85-01-8	
Phenol	**<30.8**	ug/kg	470	30.8	1	01/31/19 14:39	02/01/19 15:40	108-95-2	
Pyrene	**<35.8**	ug/kg	470	35.8	1	01/31/19 14:39	02/01/19 15:40	129-00-0	
bis(2-Chloroethoxy)methane	**<48.1**	ug/kg	470	48.1	1	01/31/19 14:39	02/01/19 15:40	111-91-1	
bis(2-Chloroethyl) ether	**<37.2**	ug/kg	470	37.2	1	01/31/19 14:39	02/01/19 15:40	111-44-4	
bis(2-Chloroisopropyl) ether	**<48.4**	ug/kg	470	48.4	1	01/31/19 14:39	02/01/19 15:40	108-60-1	
bis(2-Ethylhexyl)phthalate	**<98.0**	ug/kg	470	98.0	1	01/31/19 14:39	02/01/19 15:40	117-81-7	
Surrogates									
Nitrobenzene-d5 (S)	74	%.	47-125		1	01/31/19 14:39	02/01/19 15:40	4165-60-0	
2-Fluorobiphenyl (S)	75	%.	54-125		1	01/31/19 14:39	02/01/19 15:40	321-60-8	
p-Terphenyl-d14 (S)	83	%.	58-125		1	01/31/19 14:39	02/01/19 15:40	1718-51-0	
Phenol-d6 (S)	74	%.	48-125		1	01/31/19 14:39	02/01/19 15:40	13127-88-3	
2-Fluorophenol (S)	76	%.	41-125		1	01/31/19 14:39	02/01/19 15:40	367-12-4	
2,4,6-Tribromophenol (S)	77	%.	30-125		1	01/31/19 14:39	02/01/19 15:40	118-79-6	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.039**	mg/kg	0.084	0.039	1	01/31/19 13:50	01/31/19 19:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.015**	mg/kg	0.084	0.015	1	01/31/19 13:50	01/31/19 19:40	79-34-5	
1,1,2-Trichloroethane	**<0.010**	mg/kg	0.084	0.010	1	01/31/19 13:50	01/31/19 19:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.097**	mg/kg	0.34	0.097	1	01/31/19 13:50	01/31/19 19:40	76-13-1	
1,1-Dichloroethane	**<0.0094**	mg/kg	0.084	0.0094	1	01/31/19 13:50	01/31/19 19:40	75-34-3	
1,1-Dichloroethene	**<0.025**	mg/kg	0.34	0.025	1	01/31/19 13:50	01/31/19 19:40	75-35-4	
1,2,4-Trichlorobenzene	**<0.019**	mg/kg	0.084	0.019	1	01/31/19 13:50	01/31/19 19:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.017**	mg/kg	0.084	0.017	1	01/31/19 13:50	01/31/19 19:40	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0088**	mg/kg	0.084	0.0088	1	01/31/19 13:50	01/31/19 19:40	106-93-4	
1,2-Dichlorobenzene	**<0.0034**	mg/kg	0.084	0.0034	1	01/31/19 13:50	01/31/19 19:40	95-50-1	
1,2-Dichloroethane	**<0.0092**	mg/kg	0.084	0.0092	1	01/31/19 13:50	01/31/19 19:40	107-06-2	
1,3,5-Trimethylbenzene	**<0.013**	mg/kg	0.084	0.013	1	01/31/19 13:50	01/31/19 19:40	108-67-8	
1,3-Dichlorobenzene	**<0.0031**	mg/kg	0.084	0.0031	1	01/31/19 13:50	01/31/19 19:40	541-73-1	
1,4-Dichlorobenzene	**<0.0052**	mg/kg	0.084	0.0052	1	01/31/19 13:50	01/31/19 19:40	106-46-7	
2-Butanone (MEK)	**<0.045**	mg/kg	0.42	0.045	1	01/31/19 13:50	01/31/19 19:40	78-93-3	
2-Hexanone	**<0.019**	mg/kg	0.42	0.019	1	01/31/19 13:50	01/31/19 19:40	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.017**	mg/kg	0.42	0.017	1	01/31/19 13:50	01/31/19 19:40	108-10-1	
Acetone	**<0.52**	mg/kg	1.7	0.52	1	01/31/19 13:50	01/31/19 19:40	67-64-1	
Benzene	**<0.0047**	mg/kg	0.034	0.0047	1	01/31/19 13:50	01/31/19 19:40	71-43-2	
Bromodichloromethane	**<0.029**	mg/kg	0.084	0.029	1	01/31/19 13:50	01/31/19 19:40	75-27-4	
Bromoform	**<0.13**	mg/kg	0.34	0.13	1	01/31/19 13:50	01/31/19 19:40	75-25-2	
Bromomethane	**<0.098**	mg/kg	0.84	0.098	1	01/31/19 13:50	01/31/19 19:40	74-83-9	
Carbon tetrachloride	**<0.040**	mg/kg	0.084	0.040	1	01/31/19 13:50	01/31/19 19:40	56-23-5	
Chlorobenzene	**<0.0047**	mg/kg	0.084	0.0047	1	01/31/19 13:50	01/31/19 19:40	108-90-7	
Chloroethane	**<0.044**	mg/kg	0.84	0.044	1	01/31/19 13:50	01/31/19 19:40	75-00-3	
Chloroform	**<0.042**	mg/kg	0.34	0.042	1	01/31/19 13:50	01/31/19 19:40	67-66-3	
Chloromethane	**<0.020**	mg/kg	0.34	0.020	1	01/31/19 13:50	01/31/19 19:40	74-87-3	
Dibromochloromethane	**<0.0097**	mg/kg	0.34	0.0097	1	01/31/19 13:50	01/31/19 19:40	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Sample: RC-WC-013019 **Lab ID: 10462960001** Collected: 01/30/19 12:30 Received: 01/31/19 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Dichlorodifluoromethane	**<0.027**	mg/kg	0.34	0.027	1	01/31/19 13:50	01/31/19 19:40	75-71-8	
Ethylbenzene	**<0.0046**	mg/kg	0.084	0.0046	1	01/31/19 13:50	01/31/19 19:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.020**	mg/kg	0.42	0.020	1	01/31/19 13:50	01/31/19 19:40	87-68-3	
Methyl-tert-butyl ether	**<0.010**	mg/kg	0.084	0.010	1	01/31/19 13:50	01/31/19 19:40	1634-04-4	
Methylene Chloride	**<0.16**	mg/kg	0.34	0.16	1	01/31/19 13:50	01/31/19 19:40	75-09-2	
Naphthalene	**<0.079**	mg/kg	0.34	0.079	1	01/31/19 13:50	01/31/19 19:40	91-20-3	
Styrene	**<0.0038**	mg/kg	0.084	0.0038	1	01/31/19 13:50	01/31/19 19:40	100-42-5	
Tetrachloroethene	**<0.030**	mg/kg	0.084	0.030	1	01/31/19 13:50	01/31/19 19:40	127-18-4	
Tetrahydrofuran	**<0.12**	mg/kg	3.4	0.12	1	01/31/19 13:50	01/31/19 19:40	109-99-9	
Toluene	**<0.020**	mg/kg	0.084	0.020	1	01/31/19 13:50	01/31/19 19:40	108-88-3	
Trichloroethene	**<0.013**	mg/kg	0.084	0.013	1	01/31/19 13:50	01/31/19 19:40	79-01-6	
Trichlorofluoromethane	**<0.15**	mg/kg	0.34	0.15	1	01/31/19 13:50	01/31/19 19:40	75-69-4	
Vinyl acetate	**<0.0097**	mg/kg	0.84	0.0097	1	01/31/19 13:50	01/31/19 19:40	108-05-4	
Vinyl chloride	**<0.017**	mg/kg	0.034	0.017	1	01/31/19 13:50	01/31/19 19:40	75-01-4	
cis-1,2-Dichloroethene	**<0.014**	mg/kg	0.084	0.014	1	01/31/19 13:50	01/31/19 19:40	156-59-2	
cis-1,3-Dichloropropene	**<0.012**	mg/kg	0.084	0.012	1	01/31/19 13:50	01/31/19 19:40	10061-01-5	
m&p-Xylene	**<0.010**	mg/kg	0.17	0.010	1	01/31/19 13:50	01/31/19 19:40	179601-23-1	
o-Xylene	**<0.019**	mg/kg	0.084	0.019	1	01/31/19 13:50	01/31/19 19:40	95-47-6	
trans-1,2-Dichloroethene	**<0.039**	mg/kg	0.084	0.039	1	01/31/19 13:50	01/31/19 19:40	156-60-5	
trans-1,3-Dichloropropene	**<0.012**	mg/kg	0.084	0.012	1	01/31/19 13:50	01/31/19 19:40	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1	01/31/19 13:50	01/31/19 19:40	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	01/31/19 13:50	01/31/19 19:40	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1	01/31/19 13:50	01/31/19 19:40	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588401 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury TCLP
Associated Lab Samples: 10462960001

METHOD BLANK: 3184001 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	<0.000078	0.00060	0.000078	02/05/19 12:20	

METHOD BLANK: 3183309 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	<0.000078	0.00060	0.000078	02/05/19 13:09	

METHOD BLANK: 3183310 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	<0.000078	0.00060	0.000078	02/05/19 13:11	

LABORATORY CONTROL SAMPLE: 3184002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.015	0.015	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3184003 | 3184004

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	<0.000078	0.015	0.015	0.016	0.016	104	105	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588251 | Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B | Analysis Description: 7471B Mercury Solids
Associated Lab Samples: 10462960001

METHOD BLANK: 3183266 | Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0080	0.020	0.0080	02/04/19 12:18	

LABORATORY CONTROL SAMPLE: 3183267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3183268 3183269

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.23	0.67	0.64	0.86	0.90	95	104	80-120	4	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588400 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 | Analysis Description: 6010D TCLP
Associated Lab Samples: 10462960001

METHOD BLANK: 3183997 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	<0.019	0.50	0.019	02/04/19 14:53	
Barium	mg/L	0.044J	1.0	0.00088	02/04/19 14:53	
Cadmium	mg/L	<0.0013	0.050	0.0013	02/04/19 14:53	
Chromium	mg/L	<0.0025	0.50	0.0025	02/04/19 14:53	
Lead	mg/L	<0.0098	0.50	0.0098	02/04/19 14:53	
Selenium	mg/L	<0.029	0.10	0.029	02/04/19 14:53	
Silver	mg/L	<0.0019	0.10	0.0019	02/04/19 14:53	

METHOD BLANK: 3183309 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	<0.019	0.50	0.019	02/04/19 14:55	
Barium	mg/L	0.043J	1.0	0.00088	02/04/19 14:55	
Cadmium	mg/L	<0.0013	0.050	0.0013	02/04/19 14:55	
Chromium	mg/L	<0.0025	0.50	0.0025	02/04/19 14:55	
Lead	mg/L	<0.0098	0.50	0.0098	02/04/19 14:55	
Selenium	mg/L	<0.029	0.10	0.029	02/04/19 14:55	
Silver	mg/L	<0.0019	0.10	0.0019	02/04/19 14:55	

METHOD BLANK: 3183310 | Matrix: Water
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	<0.019	0.50	0.019	02/04/19 14:56	
Barium	mg/L	0.039J	1.0	0.00088	02/04/19 14:56	
Cadmium	mg/L	<0.0013	0.050	0.0013	02/04/19 14:56	
Chromium	mg/L	<0.0025	0.50	0.0025	02/04/19 14:56	
Lead	mg/L	<0.0098	0.50	0.0098	02/04/19 14:56	
Selenium	mg/L	<0.029	0.10	0.029	02/04/19 14:56	
Silver	mg/L	<0.0019	0.10	0.0019	02/04/19 14:56	

LABORATORY CONTROL SAMPLE: 3183998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.2	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

LABORATORY CONTROL SAMPLE: 3183998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	5	5.2	104	80-120	
Cadmium	mg/L	5	5.2	104	80-120	
Chromium	mg/L	5	5.1	101	80-120	
Lead	mg/L	5	5.1	101	80-120	
Selenium	mg/L	5	5.6	111	80-120	
Silver	mg/L	2.5	2.6	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3183999 3184000

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	<0.019	5	5	5.1	5.1	102	102	75-125	0	20	
Barium	mg/L	0.95J	5	5	6.0	6.0	101	101	75-125	1	20	
Cadmium	mg/L	<0.0013	5	5	5.1	5.1	102	103	75-125	0	20	
Chromium	mg/L	<0.0025	5	5	5.0	5.0	99	100	75-125	0	20	
Lead	mg/L	<0.0098	5	5	5.0	5.0	99	100	75-125	0	20	
Selenium	mg/L	<0.029	5	5	5.4	5.5	109	109	75-125	1	20	
Silver	mg/L	<0.0019	2.5	2.5	2.6	2.6	104	105	75-125	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588240 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3050 | Analysis Description: 6010D Solids
Associated Lab Samples: 10462960001

METHOD BLANK: 3183221 | Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.19	0.93	0.19	02/04/19 12:44	
Barium	mg/kg	0.098J	0.47	0.039	02/04/19 12:44	
Cadmium	mg/kg	0.057J	0.14	0.019	02/04/19 12:44	
Chromium	mg/kg	<0.080	0.47	0.080	02/04/19 12:44	
Lead	mg/kg	0.11J	0.47	0.11	02/04/19 12:44	
Selenium	mg/kg	<0.31	0.93	0.31	02/04/19 12:44	
Silver	mg/kg	<0.034	0.47	0.034	02/04/19 12:44	

LABORATORY CONTROL SAMPLE: 3183222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	47.2	44.3	94	80-120	
Barium	mg/kg	47.2	48.6	103	80-120	
Cadmium	mg/kg	47.2	47.1	100	80-120	
Chromium	mg/kg	47.2	48.5	103	80-120	
Lead	mg/kg	47.2	47.8	101	80-120	
Selenium	mg/kg	47.2	42.9	91	80-120	
Silver	mg/kg	23.6	23.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3183223 | 3183224

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.3J	66.5	67.8	47.4	36.0	69	51	75-125	27	20	M1,R1
Barium	mg/kg	330	66.5	67.8	300	219	-46	-163	75-125	31	20	M1,R1
Cadmium	mg/kg	<0.13	66.5	67.8	56.7	42.1	85	62	75-125	30	20	M1,R1
Chromium	mg/kg	10.6	66.5	67.8	69.1	50.6	88	59	75-125	31	20	M1,R1
Lead	mg/kg	5.2	66.5	67.8	60.8	44.9	84	59	75-125	30	20	M1,R1
Selenium	mg/kg	<2.1	66.5	67.8	44.3	32.1	67	47	75-125	32	20	M1,R1
Silver	mg/kg	<0.24	33.3	33.9	28.0	20.8	84	61	75-125	30	20	M1,R1

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588447 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10462960001

SAMPLE DUPLICATE: 3184185

Parameter	Units	10462493009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	32.6	37.4	14	30	

SAMPLE DUPLICATE: 3184260

Parameter	Units	10463136002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.4	27.7	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588126 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10462960001

METHOD BLANK: 3182815 Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	<0.023	0.050	0.023	01/31/19 16:10	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0088	0.050	0.0088	01/31/19 16:10	
1,1,2-Trichloroethane	mg/kg	<0.0060	0.050	0.0060	01/31/19 16:10	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.058	0.20	0.058	01/31/19 16:10	
1,1-Dichloroethane	mg/kg	<0.0056	0.050	0.0056	01/31/19 16:10	
1,1-Dichloroethene	mg/kg	<0.015	0.20	0.015	01/31/19 16:10	MN
1,2,4-Trichlorobenzene	mg/kg	<0.011	0.050	0.011	01/31/19 16:10	
1,2,4-Trimethylbenzene	mg/kg	<0.010	0.050	0.010	01/31/19 16:10	
1,2-Dibromoethane (EDB)	mg/kg	<0.0053	0.050	0.0053	01/31/19 16:10	
1,2-Dichlorobenzene	mg/kg	<0.0020	0.050	0.0020	01/31/19 16:10	
1,2-Dichloroethane	mg/kg	<0.0055	0.050	0.0055	01/31/19 16:10	
1,3,5-Trimethylbenzene	mg/kg	<0.0080	0.050	0.0080	01/31/19 16:10	
1,3-Dichlorobenzene	mg/kg	<0.0018	0.050	0.0018	01/31/19 16:10	
1,4-Dichlorobenzene	mg/kg	<0.0031	0.050	0.0031	01/31/19 16:10	
2-Butanone (MEK)	mg/kg	<0.027	0.25	0.027	01/31/19 16:10	
2-Hexanone	mg/kg	<0.012	0.25	0.012	01/31/19 16:10	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.010	0.25	0.010	01/31/19 16:10	
Acetone	mg/kg	<0.31	1.0	0.31	01/31/19 16:10	
Benzene	mg/kg	<0.0028	0.020	0.0028	01/31/19 16:10	
Bromodichloromethane	mg/kg	<0.017	0.050	0.017	01/31/19 16:10	
Bromoform	mg/kg	<0.076	0.20	0.076	01/31/19 16:10	
Bromomethane	mg/kg	<0.058	0.50	0.058	01/31/19 16:10	
Carbon tetrachloride	mg/kg	<0.024	0.050	0.024	01/31/19 16:10	
Chlorobenzene	mg/kg	0.0030J	0.050	0.0028	01/31/19 16:10	
Chloroethane	mg/kg	<0.026	0.50	0.026	01/31/19 16:10	
Chloroform	mg/kg	<0.025	0.20	0.025	01/31/19 16:10	MN
Chloromethane	mg/kg	<0.012	0.20	0.012	01/31/19 16:10	
cis-1,2-Dichloroethene	mg/kg	<0.0083	0.050	0.0083	01/31/19 16:10	
cis-1,3-Dichloropropene	mg/kg	<0.0072	0.050	0.0072	01/31/19 16:10	
Dibromochloromethane	mg/kg	<0.0058	0.20	0.0058	01/31/19 16:10	
Dichlorodifluoromethane	mg/kg	<0.016	0.20	0.016	01/31/19 16:10	
Ethylbenzene	mg/kg	0.011J	0.050	0.0027	01/31/19 16:10	
Hexachloro-1,3-butadiene	mg/kg	<0.012	0.25	0.012	01/31/19 16:10	
m&p-Xylene	mg/kg	0.016J	0.10	0.0062	01/31/19 16:10	
Methyl-tert-butyl ether	mg/kg	<0.0060	0.050	0.0060	01/31/19 16:10	
Methylene Chloride	mg/kg	<0.094	0.20	0.094	01/31/19 16:10	
Naphthalene	mg/kg	<0.047	0.20	0.047	01/31/19 16:10	
o-Xylene	mg/kg	0.012J	0.050	0.012	01/31/19 16:10	
Styrene	mg/kg	<0.0023	0.050	0.0023	01/31/19 16:10	
Tetrachloroethene	mg/kg	<0.018	0.050	0.018	01/31/19 16:10	
Tetrahydrofuran	mg/kg	<0.073	2.0	0.073	01/31/19 16:10	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

METHOD BLANK: 3182815 Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	mg/kg	<0.012	0.050	0.012	01/31/19 16:10	
trans-1,2-Dichloroethene	mg/kg	<0.023	0.050	0.023	01/31/19 16:10	
trans-1,3-Dichloropropene	mg/kg	<0.0070	0.050	0.0070	01/31/19 16:10	
Trichloroethene	mg/kg	<0.0077	0.050	0.0077	01/31/19 16:10	
Trichlorofluoromethane	mg/kg	<0.087	0.20	0.087	01/31/19 16:10	
Vinyl acetate	mg/kg	<0.0058	0.50	0.0058	01/31/19 16:10	
Vinyl chloride	mg/kg	<0.0098	0.020	0.0098	01/31/19 16:10	
1,2-Dichloroethane-d4 (S)	%.	93	75-125		01/31/19 16:10	
4-Bromofluorobenzene (S)	%.	101	75-125		01/31/19 16:10	
Toluene-d8 (S)	%.	98	75-125		01/31/19 16:10	

LABORATORY CONTROL SAMPLE & LCSD: 3182816 3182817

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	mg/kg	1	0.86	0.81	86	81	53-146	6	20	
1,1,2,2-Tetrachloroethane	mg/kg	1	0.68	0.68	68	68	51-125	0	20	
1,1,2-Trichloroethane	mg/kg	1	0.80	0.75	80	75	55-125	6	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	0.89	0.83	89	83	49-150	7	20	
1,1-Dichloroethane	mg/kg	1	0.83	0.79	83	79	56-125	4	20	
1,1-Dichloroethene	mg/kg	1	0.84	0.80	84	80	48-148	5	20	
1,2,4-Trichlorobenzene	mg/kg	1	0.70	0.70	70	70	48-125	1	20	
1,2,4-Trimethylbenzene	mg/kg	1	0.77	0.73	77	73	51-126	6	20	
1,2-Dibromoethane (EDB)	mg/kg	1	0.74	0.73	74	73	52-125	1	20	
1,2-Dichlorobenzene	mg/kg	1	0.70	0.66	70	66	50-125	6	20	
1,2-Dichloroethane	mg/kg	1	0.79	0.78	79	78	51-125	0	20	
1,3,5-Trimethylbenzene	mg/kg	1	0.76	0.74	76	74	52-127	2	20	
1,3-Dichlorobenzene	mg/kg	1	0.70	0.66	70	66	50-128	5	20	
1,4-Dichlorobenzene	mg/kg	1	0.68	0.66	68	66	51-125	4	20	
2-Butanone (MEK)	mg/kg	5	3.5	3.5	70	70	43-125	1	20	
2-Hexanone	mg/kg	5	3.5	3.4	70	69	44-137	1	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	3.3	3.3	67	66	39-125	2	20	
Acetone	mg/kg	5	5.0	4.8	99	97	46-136	2	20	
Benzene	mg/kg	1	0.84	0.84	84	84	48-125	0	20	
Bromodichloromethane	mg/kg	1	0.77	0.74	77	74	51-131	4	20	
Bromoform	mg/kg	1	0.74	0.73	74	73	52-125	1	20	
Bromomethane	mg/kg	1	0.80	0.75	80	75	30-150	7	20	
Carbon tetrachloride	mg/kg	1	0.82	0.79	82	79	59-129	4	20	
Chlorobenzene	mg/kg	1	0.73	0.72	73	72	54-125	1	20	
Chloroethane	mg/kg	1	0.90	0.75	90	75	61-132	19	20	
Chloroform	mg/kg	1	0.86	0.83	86	83	52-125	3	20	
Chloromethane	mg/kg	1	0.84	0.81	84	81	46-125	3	20	
cis-1,2-Dichloroethene	mg/kg	1	0.86	0.84	86	84	54-127	3	20	
cis-1,3-Dichloropropene	mg/kg	1	0.81	0.79	81	79	50-134	3	20	
Dibromochloromethane	mg/kg	1	0.77	0.76	77	76	54-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

LABORATORY CONTROL SAMPLE & LCSD: 3182816 3182817

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Dichlorodifluoromethane	mg/kg	1	0.85	0.80	85	80	42-125	6	20	
Ethylbenzene	mg/kg	1	0.74	0.73	74	73	51-125	1	20	
Hexachloro-1,3-butadiene	mg/kg	1	0.74	0.71	74	71	41-133	3	20	
m&p-Xylene	mg/kg	2	1.5	1.5	76	73	51-128	4	20	
Methyl-tert-butyl ether	mg/kg	1	0.76	0.74	76	74	53-125	2	20	
Methylene Chloride	mg/kg	1	0.82	0.80	82	80	48-125	3	20	
Naphthalene	mg/kg	1	0.66	0.64	66	64	51-125	3	20	
o-Xylene	mg/kg	1	0.77	0.77	77	77	53-125	1	20	
Styrene	mg/kg	1	0.79	0.78	79	78	53-128	1	20	
Tetrachloroethene	mg/kg	1	0.74	0.75	74	75	54-131	1	20	
Tetrahydrofuran	mg/kg	10	9.1	8.7	91	87	42-145	5	20	
Toluene	mg/kg	1	0.75	0.74	75	74	51-125	2	20	
trans-1,2-Dichloroethene	mg/kg	1	0.90	0.86	90	86	50-130	5	20	
trans-1,3-Dichloropropene	mg/kg	1	0.74	0.74	74	74	52-125	0	20	
Trichloroethene	mg/kg	1	0.79	0.77	79	77	55-131	2	20	
Trichlorofluoromethane	mg/kg	1	1.1	0.81	105	81	30-150	26	20	R1
Vinyl acetate	mg/kg	1	0.72	0.67	72	67	46-125	7	20	
Vinyl chloride	mg/kg	1	0.94	0.89	94	89	58-125	5	20	
1,2-Dichloroethane-d4 (S)	%.				90	94	75-125			
4-Bromofluorobenzene (S)	%.				102	99	75-125			
Toluene-d8 (S)	%.				94	97	75-125			

MATRIX SPIKE SAMPLE: 3182818

Parameter	Units	10462851001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	1.1	1.3	114	63-150	
1,1,2,2-Tetrachloroethane	mg/kg	ND	1.1	1.0	91	60-146	
1,1,2-Trichloroethane	mg/kg	ND	1.1	1.1	104	63-143	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	1.1	1.3	115	30-150	
1,1-Dichloroethane	mg/kg	ND	1.1	1.2	113	63-144	
1,1-Dichloroethene	mg/kg	ND	1.1	1.2	108	30-150	
1,2,4-Trichlorobenzene	mg/kg	ND	1.1	1.2	105	66-142	
1,2,4-Trimethylbenzene	mg/kg	ND	1.1	1.2	109	65-145	
1,2-Dibromoethane (EDB)	mg/kg	ND	1.1	1.1	101	67-135	
1,2-Dichlorobenzene	mg/kg	ND	1.1	1.0	95	68-141	
1,2-Dichloroethane	mg/kg	ND	1.1	1.2	106	56-132	
1,3,5-Trimethylbenzene	mg/kg	ND	1.1	1.2	107	66-148	
1,3-Dichlorobenzene	mg/kg	ND	1.1	1.1	96	63-148	
1,4-Dichlorobenzene	mg/kg	ND	1.1	1.0	95	68-140	
2-Butanone (MEK)	mg/kg	ND	5.5	5.1	93	53-138	
2-Hexanone	mg/kg	ND	5.5	5.3	96	57-150	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	5.5	5.1	93	47-150	
Acetone	mg/kg	ND	5.5	7.7	140	64-150	
Benzene	mg/kg	28.5 ug/kg	1.1	1.3	116	63-136	
Bromodichloromethane	mg/kg	ND	1.1	1.2	107	63-150	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

MATRIX SPIKE SAMPLE: 3182818

Parameter	Units	10462851001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromoform	mg/kg	ND	1.1	1.1	102	64-140	
Bromomethane	mg/kg	ND	1.1	0.99	90	56-148	
Carbon tetrachloride	mg/kg	ND	1.1	1.2	111	75-148	
Chlorobenzene	mg/kg	ND	1.1	1.1	103	62-147	
Chloroethane	mg/kg	ND	1.1	1.0	94	37-150	
Chloroform	mg/kg	ND	1.1	1.3	115	66-130	
Chloromethane	mg/kg	ND	1.1	1.1	97	35-131	
cis-1,2-Dichloroethene	mg/kg	ND	1.1	1.3	118	63-143	
cis-1,3-Dichloropropene	mg/kg	ND	1.1	1.2	110	60-150	
Dibromochloromethane	mg/kg	ND	1.1	1.2	107	64-144	
Dichlorodifluoromethane	mg/kg	ND	1.1	0.94	85	30-125	
Ethylbenzene	mg/kg	ND	1.1	1.1	101	64-142	
Hexachloro-1,3-butadiene	mg/kg	ND	1.1	1.4	128	58-150	
m&p-Xylene	mg/kg	ND	2.2	2.3	104	67-145	
Methyl-tert-butyl ether	mg/kg	ND	1.1	1.1	104	69-134	
Methylene Chloride	mg/kg	ND	1.1	1.2	110	56-134	
Naphthalene	mg/kg	ND	1.1	1.1	93	63-148	
o-Xylene	mg/kg	ND	1.1	1.2	108	63-148	
Styrene	mg/kg	ND	1.1	1.2	109	63-150	
Tetrachloroethene	mg/kg	ND	1.1	1.1	104	62-150	
Tetrahydrofuran	mg/kg	ND	11	14.0	128	53-150	
Toluene	mg/kg	ND	1.1	1.2	106	61-141	
trans-1,2-Dichloroethene	mg/kg	ND	1.1	1.3	117	52-148	
trans-1,3-Dichloropropene	mg/kg	ND	1.1	1.1	104	62-142	
Trichloroethene	mg/kg	ND	1.1	1.3	116	59-150	
Trichlorofluoromethane	mg/kg	ND	1.1	1.1	104	30-150	
Vinyl acetate	mg/kg	ND	1.1	0.21J	19	30-150	M1
Vinyl chloride	mg/kg	ND	1.1	1.2	108	44-144	
1,2-Dichloroethane-d4 (S)	%.				91	75-125	
4-Bromofluorobenzene (S)	%.				101	75-125	
Toluene-d8 (S)	%.				97	75-125	

SAMPLE DUPLICATE: 3182819

Parameter	Units	10462851002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	<0.026		30	
1,1,2,2-Tetrachloroethane	mg/kg	ND	<0.0097		30	
1,1,2-Trichloroethane	mg/kg	ND	<0.0066		30	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	<0.064		30	
1,1-Dichloroethane	mg/kg	ND	<0.0062		30	
1,1-Dichloroethene	mg/kg	ND	<0.017		30	
1,2,4-Trichlorobenzene	mg/kg	ND	<0.012		30	
1,2,4-Trimethylbenzene	mg/kg	ND	<0.011		30	
1,2-Dibromoethane (EDB)	mg/kg	ND	<0.0058		30	
1,2-Dichlorobenzene	mg/kg	ND	<0.0022		30	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

SAMPLE DUPLICATE: 3182819

Parameter	Units	10462851002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	mg/kg	ND	<0.0061		30	
1,3,5-Trimethylbenzene	mg/kg	ND	<0.0088		30	
1,3-Dichlorobenzene	mg/kg	ND	<0.0020		30	
1,4-Dichlorobenzene	mg/kg	ND	<0.0034		30	
2-Butanone (MEK)	mg/kg	ND	<0.029		30	
2-Hexanone	mg/kg	ND	<0.013		30	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	<0.012		30	
Acetone	mg/kg	ND	<0.34		30	
Benzene	mg/kg	ND	<0.0031		30	
Bromodichloromethane	mg/kg	ND	<0.019		30	
Bromoform	mg/kg	ND	<0.084		30	
Bromomethane	mg/kg	ND	<0.065		30	
Carbon tetrachloride	mg/kg	ND	<0.026		30	
Chlorobenzene	mg/kg	ND	<0.0031		30	
Chloroethane	mg/kg	ND	<0.029		30	
Chloroform	mg/kg	ND	<0.028		30	
Chloromethane	mg/kg	ND	<0.013		30	
cis-1,2-Dichloroethene	mg/kg	ND	<0.0092		30	
cis-1,3-Dichloropropene	mg/kg	ND	<0.0079		30	
Dibromochloromethane	mg/kg	ND	<0.0064		30	
Dichlorodifluoromethane	mg/kg	ND	<0.018		30	
Ethylbenzene	mg/kg	ND	<0.0030		30	
Hexachloro-1,3-butadiene	mg/kg	ND	<0.013		30	
m&p-Xylene	mg/kg	ND	<0.0068		30	
Methyl-tert-butyl ether	mg/kg	ND	<0.0066		30	
Methylene Chloride	mg/kg	ND	<0.10		30	
Naphthalene	mg/kg	ND	<0.052		30	
o-Xylene	mg/kg	ND	<0.013		30	
Styrene	mg/kg	ND	<0.0025		30	
Tetrachloroethene	mg/kg	ND	<0.019		30	
Tetrahydrofuran	mg/kg	ND	<0.080		30	
Toluene	mg/kg	ND	<0.013		30	
trans-1,2-Dichloroethene	mg/kg	ND	<0.026		30	
trans-1,3-Dichloropropene	mg/kg	ND	<0.0077		30	
Trichloroethene	mg/kg	ND	<0.0085		30	
Trichlorofluoromethane	mg/kg	ND	<0.096		30	
Vinyl acetate	mg/kg	ND	<0.0064		30	
Vinyl chloride	mg/kg	ND	<0.011		30	
1,2-Dichloroethane-d4 (S)	%.	96	97	7		
4-Bromofluorobenzene (S)	%.	103	100	3		
Toluene-d8 (S)	%.	97	100	8		

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

QC Batch: 588156 Analysis Method: EPA 8270D
QC Batch Method: EPA 3550 Analysis Description: 8270D Solid MSSV
Associated Lab Samples: 10462960001

METHOD BLANK: 3182946 Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	<36.2	330	36.2	02/01/19 14:00	
1,2-Dichlorobenzene	ug/kg	<34.6	330	34.6	02/01/19 14:00	
1,2-Diphenylhydrazine	ug/kg	<40.5	330	40.5	02/01/19 14:00	
1,3-Dichlorobenzene	ug/kg	<22.6	330	22.6	02/01/19 14:00	
1,4-Dichlorobenzene	ug/kg	<36.7	330	36.7	02/01/19 14:00	
1-Methylnaphthalene	ug/kg	<30.5	330	30.5	02/01/19 14:00	
2,4,5-Trichlorophenol	ug/kg	<42.5	330	42.5	02/01/19 14:00	
2,4,6-Trichlorophenol	ug/kg	<51.1	330	51.1	02/01/19 14:00	
2,4-Dichlorophenol	ug/kg	<55.1	330	55.1	02/01/19 14:00	
2,4-Dimethylphenol	ug/kg	<129	330	129	02/01/19 14:00	
2,4-Dinitrophenol	ug/kg	<154	330	154	02/01/19 14:00	
2,4-Dinitrotoluene	ug/kg	<42.0	330	42.0	02/01/19 14:00	
2,6-Dinitrotoluene	ug/kg	<43.7	330	43.7	02/01/19 14:00	
2-Chloronaphthalene	ug/kg	<29.2	330	29.2	02/01/19 14:00	
2-Chlorophenol	ug/kg	<37.6	330	37.6	02/01/19 14:00	
2-Methylnaphthalene	ug/kg	<29.8	330	29.8	02/01/19 14:00	
2-Methylphenol(o-Cresol)	ug/kg	<20.6	330	20.6	02/01/19 14:00	
2-Nitroaniline	ug/kg	<82.8	330	82.8	02/01/19 14:00	
2-Nitrophenol	ug/kg	<40.2	330	40.2	02/01/19 14:00	
3&4-Methylphenol(m&p Cresol)	ug/kg	<18.6	660	18.6	02/01/19 14:00	
3,3'-Dichlorobenzidine	ug/kg	<111	330	111	02/01/19 14:00	
3-Nitroaniline	ug/kg	<36.0	330	36.0	02/01/19 14:00	
4,6-Dinitro-2-methylphenol	ug/kg	<327	1700	327	02/01/19 14:00	
4-Bromophenylphenyl ether	ug/kg	<39.3	330	39.3	02/01/19 14:00	
4-Chloro-3-methylphenol	ug/kg	<52.8	330	52.8	02/01/19 14:00	
4-Chloroaniline	ug/kg	<87.9	330	87.9	02/01/19 14:00	
4-Chlorophenylphenyl ether	ug/kg	<40.9	330	40.9	02/01/19 14:00	
4-Nitroaniline	ug/kg	<48.2	330	48.2	02/01/19 14:00	
4-Nitrophenol	ug/kg	<64.0	330	64.0	02/01/19 14:00	
Acenaphthene	ug/kg	<35.2	330	35.2	02/01/19 14:00	
Acenaphthylene	ug/kg	<42.1	330	42.1	02/01/19 14:00	
Anthracene	ug/kg	<38.7	330	38.7	02/01/19 14:00	
Benzo(a)anthracene	ug/kg	<33.9	330	33.9	02/01/19 14:00	
Benzo(a)pyrene	ug/kg	<37.4	330	37.4	02/01/19 14:00	
Benzo(b)fluoranthene	ug/kg	<32.3	330	32.3	02/01/19 14:00	
Benzo(g,h,i)perylene	ug/kg	130J	330	35.3	02/01/19 14:00	
Benzo(k)fluoranthene	ug/kg	<41.2	330	41.2	02/01/19 14:00	
bis(2-Chloroethoxy)methane	ug/kg	<33.8	330	33.8	02/01/19 14:00	
bis(2-Chloroethyl) ether	ug/kg	<26.1	330	26.1	02/01/19 14:00	
bis(2-Chloroisopropyl) ether	ug/kg	<34.0	330	34.0	02/01/19 14:00	
bis(2-Ethylhexyl)phthalate	ug/kg	<68.8	330	68.8	02/01/19 14:00	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

METHOD BLANK: 3182946 Matrix: Solid
Associated Lab Samples: 10462960001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	<30.2	330	30.2	02/01/19 14:00	
Carbazole	ug/kg	<27.4	330	27.4	02/01/19 14:00	
Chrysene	ug/kg	<34.8	330	34.8	02/01/19 14:00	
Di-n-butylphthalate	ug/kg	<45.2	330	45.2	02/01/19 14:00	
Di-n-octylphthalate	ug/kg	<38.3	330	38.3	02/01/19 14:00	
Dibenz(a,h)anthracene	ug/kg	<35.1	330	35.1	02/01/19 14:00	
Dibenzofuran	ug/kg	<41.8	330	41.8	02/01/19 14:00	
Diethylphthalate	ug/kg	<29.4	330	29.4	02/01/19 14:00	
Dimethylphthalate	ug/kg	<44.8	330	44.8	02/01/19 14:00	
Fluoranthene	ug/kg	<37.9	330	37.9	02/01/19 14:00	
Fluorene	ug/kg	<151	330	151	02/01/19 14:00	
Hexachloro-1,3-butadiene	ug/kg	<50.2	330	50.2	02/01/19 14:00	
Hexachlorobenzene	ug/kg	<53.8	330	53.8	02/01/19 14:00	
Hexachloroethane	ug/kg	<42.9	330	42.9	02/01/19 14:00	
Indeno(1,2,3-cd)pyrene	ug/kg	42.2J	330	19.9	02/01/19 14:00	
Isophorone	ug/kg	<25.4	330	25.4	02/01/19 14:00	
N-Nitroso-di-n-propylamine	ug/kg	<151	330	151	02/01/19 14:00	
N-Nitrosodimethylamine	ug/kg	<40.5	330	40.5	02/01/19 14:00	
N-Nitrosodiphenylamine	ug/kg	<21.4	330	21.4	02/01/19 14:00	
Naphthalene	ug/kg	<25.4	330	25.4	02/01/19 14:00	
Nitrobenzene	ug/kg	<36.3	330	36.3	02/01/19 14:00	
Pentachlorophenol	ug/kg	<193	670	193	02/01/19 14:00	
Phenanthrene	ug/kg	<38.4	330	38.4	02/01/19 14:00	
Phenol	ug/kg	<21.6	330	21.6	02/01/19 14:00	
Pyrene	ug/kg	<25.1	330	25.1	02/01/19 14:00	
2,4,6-Tribromophenol (S)	%.	72	30-125		02/01/19 14:00	
2-Fluorobiphenyl (S)	%.	65	54-125		02/01/19 14:00	
2-Fluorophenol (S)	%.	64	41-125		02/01/19 14:00	
Nitrobenzene-d5 (S)	%.	64	47-125		02/01/19 14:00	
p-Terphenyl-d14 (S)	%.	78	58-125		02/01/19 14:00	
Phenol-d6 (S)	%.	63	48-125		02/01/19 14:00	

LABORATORY CONTROL SAMPLE: 3182947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1180	71	43-125	
1,2-Dichlorobenzene	ug/kg	1670	1150	69	41-125	
1,2-Diphenylhydrazine	ug/kg	1670	1340	80	59-125	
1,3-Dichlorobenzene	ug/kg	1670	1130	68	40-125	
1,4-Dichlorobenzene	ug/kg	1670	1110	67	40-125	
1-Methylnaphthalene	ug/kg	1670	1280	77	53-125	
2,4,5-Trichlorophenol	ug/kg	1670	1360	81	61-125	
2,4,6-Trichlorophenol	ug/kg	1670	1350	81	60-125	
2,4-Dichlorophenol	ug/kg	1670	1290	78	49-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

LABORATORY CONTROL SAMPLE: 3182947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dimethylphenol	ug/kg	1670	1210	73	30-125	
2,4-Dinitrophenol	ug/kg	1670	863	52	30-125	
2,4-Dinitrotoluene	ug/kg	1670	1370	82	62-125	
2,6-Dinitrotoluene	ug/kg	1670	1350	81	61-125	
2-Chloronaphthalene	ug/kg	1670	1290	77	56-125	
2-Chlorophenol	ug/kg	1670	1170	70	42-125	
2-Methylnaphthalene	ug/kg	1670	1270	76	48-125	
2-Methylphenol(o-Cresol)	ug/kg	1670	1160	70	44-125	
2-Nitroaniline	ug/kg	1670	1290	78	60-125	
2-Nitrophenol	ug/kg	1670	1200	72	45-125	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1230	74	47-125	
3,3'-Dichlorobenzidine	ug/kg	1670	1030	62	34-125	
3-Nitroaniline	ug/kg	1670	1110	66	48-125	
4,6-Dinitro-2-methylphenol	ug/kg	1670	1100J	66	44-125	
4-Bromophenylphenyl ether	ug/kg	1670	1430	86	59-125	
4-Chloro-3-methylphenol	ug/kg	1670	1340	80	58-125	
4-Chloroaniline	ug/kg	1670	675	40	31-125	
4-Chlorophenylphenyl ether	ug/kg	1670	1360	81	61-125	
4-Nitroaniline	ug/kg	1670	1260	76	54-125	
4-Nitrophenol	ug/kg	1670	1340	80	53-125	
Acenaphthene	ug/kg	1670	1320	79	58-125	
Acenaphthylene	ug/kg	1670	1300	78	56-125	
Anthracene	ug/kg	1670	1400	84	59-125	
Benzo(a)anthracene	ug/kg	1670	1400	84	63-125	
Benzo(a)pyrene	ug/kg	1670	1420	85	65-125	
Benzo(b)fluoranthene	ug/kg	1670	1470	88	66-125	
Benzo(g,h,i)perylene	ug/kg	1670	1350	81	65-125	
Benzo(k)fluoranthene	ug/kg	1670	1400	84	64-125	
bis(2-Chloroethoxy)methane	ug/kg	1670	1230	74	46-125	
bis(2-Chloroethyl) ether	ug/kg	1670	1110	67	40-125	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1090	66	35-125	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1360	82	63-125	
Butylbenzylphthalate	ug/kg	1670	1380	83	65-125	
Carbazole	ug/kg	1670	1400	84	61-125	
Chrysene	ug/kg	1670	1450	87	64-125	
Di-n-butylphthalate	ug/kg	1670	1460	88	64-125	
Di-n-octylphthalate	ug/kg	1670	1390	84	62-125	
Dibenz(a,h)anthracene	ug/kg	1670	1410	85	61-125	
Dibenzofuran	ug/kg	1670	1340	80	60-125	
Diethylphthalate	ug/kg	1670	1370	82	62-125	
Dimethylphthalate	ug/kg	1670	1360	82	62-125	
Fluoranthene	ug/kg	1670	1450	87	60-125	
Fluorene	ug/kg	1670	1370	82	62-125	
Hexachloro-1,3-butadiene	ug/kg	1670	1180	71	39-125	
Hexachlorobenzene	ug/kg	1670	1410	85	61-125	
Hexachloroethane	ug/kg	1670	1100	66	39-125	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1390	84	62-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

LABORATORY CONTROL SAMPLE: 3182947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	1670	1240	75	49-125	
N-Nitroso-di-n-propylamine	ug/kg	1670	1190	71	48-125	
N-Nitrosodimethylamine	ug/kg	1670	1100	66	34-125	
N-Nitrosodiphenylamine	ug/kg	1670	1390	83	53-125	
Naphthalene	ug/kg	1670	1200	72	44-125	
Nitrobenzene	ug/kg	1670	1160	70	44-125	
Pentachlorophenol	ug/kg	1670	959	58	41-125	
Phenanthrene	ug/kg	1670	1400	84	61-125	
Phenol	ug/kg	1670	1160	69	45-125	
Pyrene	ug/kg	1670	1400	84	62-125	
2,4,6-Tribromophenol (S)	%.			80	30-125	
2-Fluorobiphenyl (S)	%.			71	54-125	
2-Fluorophenol (S)	%.			67	41-125	
Nitrobenzene-d5 (S)	%.			66	47-125	
p-Terphenyl-d14 (S)	%.			79	58-125	
Phenol-d6 (S)	%.			66	48-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3182948 3182949

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	<51.6	2370	2350	1970	1860	84	79	41-125	6	30	
1,2-Dichlorobenzene	ug/kg	<49.3	2370	2350	1890	1790	80	76	37-125	5	30	
1,2-Diphenylhydrazine	ug/kg	<57.7	2370	2350	1960	1930	83	82	51-125	2	30	
1,3-Dichlorobenzene	ug/kg	<32.2	2370	2350	1860	1760	79	75	35-125	6	30	
1,4-Dichlorobenzene	ug/kg	<52.3	2370	2350	1840	1780	78	76	36-125	3	30	
1-Methylnaphthalene	ug/kg	<43.4	2370	2350	1980	1890	84	80	47-125	4	30	
2,4,5-Trichlorophenol	ug/kg	<60.5	2370	2350	1980	1950	84	83	52-125	2	30	
2,4,6-Trichlorophenol	ug/kg	<72.8	2370	2350	1900	1920	81	82	51-125	1	30	
2,4-Dichlorophenol	ug/kg	<78.5	2370	2350	1950	1930	83	82	51-125	1	30	
2,4-Dimethylphenol	ug/kg	<184	2370	2350	1850	1810	78	77	30-125	2	30	
2,4-Dinitrophenol	ug/kg	<219	2370	2350	1270	1180	54	50	30-125	7	30	
2,4-Dinitrotoluene	ug/kg	<59.8	2370	2350	1970	1940	84	83	30-125	2	30	
2,6-Dinitrotoluene	ug/kg	<62.2	2370	2350	1930	1960	82	83	31-125	1	30	
2-Chloronaphthalene	ug/kg	<41.6	2370	2350	1970	1920	83	82	55-125	2	30	
2-Chlorophenol	ug/kg	<53.6	2370	2350	1910	1830	81	78	41-125	4	30	
2-Methylnaphthalene	ug/kg	<42.4	2370	2350	1980	1870	84	79	47-125	6	30	
2-Methylphenol(o-Cresol)	ug/kg	<29.3	2370	2350	1870	1780	79	75	42-125	5	30	
2-Nitroaniline	ug/kg	<118	2370	2350	1930	1900	82	81	54-125	1	30	
2-Nitrophenol	ug/kg	<57.3	2370	2350	1950	1900	83	81	30-125	3	30	
3&4-Methylphenol(m&p Cresol)	ug/kg	<26.5	2370	2350	1910	1840	81	78	47-125	4	30	
3,3'-Dichlorobenzidine	ug/kg	<158	2370	2350	1390	1420	59	61	30-125	3	30	
3-Nitroaniline	ug/kg	<51.3	2370	2350	1430	1340	61	57	30-149	7	30	
4,6-Dinitro-2-methylphenol	ug/kg	<466	2370	2350	1660J	1520J	70	65	30-125		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3182948 3182949

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromophenylphenyl ether	ug/kg	<56.0	2370	2350	1980	1980	84	84	57-125	0	30	
4-Chloro-3-methylphenol	ug/kg	<75.2	2370	2350	2000	1940	85	82	55-125	3	30	
4-Chloroaniline	ug/kg	<125	2370	2350	826	743	35	32	30-125	11	30	
4-Chlorophenylphenyl ether	ug/kg	<58.3	2370	2350	2020	2000	86	85	58-125	1	30	
4-Nitroaniline	ug/kg	<68.7	2370	2350	1900	1860	80	79	41-125	2	30	
4-Nitrophenol	ug/kg	<91.2	2370	2350	2060	1780	87	76	30-131	14	30	
Acenaphthene	ug/kg	<50.1	2370	2350	1980	1940	84	82	51-125	2	30	
Acenaphthylene	ug/kg	<60.0	2370	2350	1960	1940	83	82	52-125	1	30	
Anthracene	ug/kg	<55.1	2370	2350	1980	1970	84	84	54-125	0	30	
Benzo(a)anthracene	ug/kg	<48.3	2370	2350	2000	1940	85	82	48-125	3	30	
Benzo(a)pyrene	ug/kg	<53.3	2370	2350	2040	2020	86	86	51-125	1	30	
Benzo(b)fluoranthene	ug/kg	<46.0	2370	2350	2130	1970	90	84	50-125	8	30	
Benzo(g,h,i)perylene	ug/kg	<50.3	2370	2350	1870	1940	79	82	48-125	4	30	
Benzo(k)fluoranthene	ug/kg	<58.7	2370	2350	2030	2120	86	90	48-125	4	30	
bis(2-Chloroethoxy)methane	ug/kg	<48.1	2370	2350	1930	1870	82	80	45-125	3	30	
bis(2-Chloroethyl) ether	ug/kg	<37.2	2370	2350	1850	1770	78	75	34-125	4	30	
bis(2-Chloroisopropyl) ether	ug/kg	<48.4	2370	2350	1830	1750	78	74	33-125	5	30	
bis(2-Ethylhexyl)phthalate	ug/kg	<98.0	2370	2350	1990	2030	83	84	52-125	2	30	
Butylbenzylphthalate	ug/kg	<43.0	2370	2350	1980	1940	84	83	53-125	2	30	
Carbazole	ug/kg	<39.0	2370	2350	2010	1970	85	84	54-125	2	30	
Chrysene	ug/kg	<49.6	2370	2350	2050	2000	87	85	49-125	2	30	
Di-n-butylphthalate	ug/kg	<64.4	2370	2350	2060	2040	87	87	60-125	1	30	
Di-n-octylphthalate	ug/kg	<54.6	2370	2350	1990	1990	84	84	52-125	0	30	
Dibenz(a,h)anthracene	ug/kg	<50.0	2370	2350	2050	2040	87	87	51-125	0	30	
Dibenzofuran	ug/kg	<59.5	2370	2350	1990	1960	85	83	55-125	2	30	
Diethylphthalate	ug/kg	<41.9	2370	2350	2010	1970	85	84	61-125	2	30	
Dimethylphthalate	ug/kg	<63.8	2370	2350	1960	1940	83	83	58-125	1	30	
Fluoranthene	ug/kg	<54.0	2370	2350	2050	2000	87	85	47-125	3	30	
Fluorene	ug/kg	<215	2370	2350	2000	1970	85	84	51-125	1	30	
Hexachloro-1,3-butadiene	ug/kg	<71.5	2370	2350	1970	1860	83	79	38-125	5	30	
Hexachlorobenzene	ug/kg	<76.6	2370	2350	2020	1960	85	83	52-125	3	30	
Hexachloroethane	ug/kg	<61.1	2370	2350	1820	1740	77	74	30-125	5	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<28.3	2370	2350	2000	2000	85	85	47-125	0	30	
Isophorone	ug/kg	<36.2	2370	2350	1920	1840	82	78	46-125	5	30	
N-Nitroso-di-n-propylamine	ug/kg	<215	2370	2350	1920	1840	81	78	44-125	4	30	
N-Nitrosodimethylamine	ug/kg	<57.7	2370	2350	1820	1660	77	71	30-125	9	30	
N-Nitrosodiphenylamine	ug/kg	<30.5	2370	2350	2010	1970	85	84	40-125	2	30	
Naphthalene	ug/kg	<36.2	2370	2350	1980	1890	84	80	43-125	5	30	
Nitrobenzene	ug/kg	<51.7	2370	2350	1920	1810	81	77	42-125	6	30	
Pentachlorophenol	ug/kg	<275	2370	2350	1350	1420	57	60	30-129	5	30	
Phenanthrene	ug/kg	<54.7	2370	2350	2010	1990	85	84	50-125	1	30	
Phenol	ug/kg	<30.8	2370	2350	1850	1780	78	76	43-125	4	30	
Pyrene	ug/kg	<35.8	2370	2350	2010	1950	85	83	41-125	3	30	
2,4,6-Tribromophenol (S)	%.						79	77	30-125			
2-Fluorobiphenyl (S)	%.						73	70	54-125			
2-Fluorophenol (S)	%.						75	73	41-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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(612)607-1700

QUALITY CONTROL DATA

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3182948 3182949

Parameter	Units	10462960001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrobenzene-d5 (S)	%.						73	71	47-125			
p-Terphenyl-d14 (S)	%.						75	75	58-125			
Phenol-d6 (S)	%.						74	70	48-125			

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QUALIFIERS

Project:	1497 Freeman,WA Grain Facility
Pace Project No.:	10462960

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 588176

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman,WA Grain Facility
Pace Project No.: 10462960

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10462960001	**RC-WC-013019**	EPA 3010	588400	EPA 6010D	588449
10462960001	**RC-WC-013019**	EPA 3050	588240	EPA 6010D	588365
10462960001	**RC-WC-013019**	EPA 7470A	588401	EPA 7470A	588484
10462960001	**RC-WC-013019**	EPA 7471B	588251	EPA 7471B	588480
10462960001	**RC-WC-013019**	ASTM D2974	588447		
10462960001	**RC-WC-013019**	EPA 3550	588156	EPA 8270D	588330
10462960001	**RC-WC-013019**	EPA 5035/5030B	588126	EPA 8260B	588176

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

2134915

Section A Required Client Information:

Company:	Jacobs
Address:	999 W. Riverside
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	~~Rush~~ 3 day TAT

Section B Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Jon Espinoza David Hodson, UPRR-Sysdatagld
Purchase Order No.:	
Project Name:	Freeman, WA Grain Facility
Project Number:	1497

Section C Invoice Information:

Attention:	Anne Walsh
Company Name:	UPRR
Address:	1400 W. 52nd Ave 8022
Pace Quote Reference:	Contract # 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	36447/9 and 10

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: WA

Requested Analysis Filtered (Y/N)

WO#: 10462960

10462960

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE (2019)	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	VOC 8260	Dry weight/% moisture	6018 RCRA 8 metals	7470 RCRA Mercury	8270 SVOCs	6010 TCLP RCRA							Residual Chlo	Pace Project No./ Lab I.D.
1	RC-WC-013019	SL	C	—	—	1/30	1230	—	6	X						X			X	X	X	X	X	X								001
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
~~Rush TAT~~ 3 day TAT	[signature] / Jacobs	1/30/19	1600	Jennifer Johnson Pace	1/31/19	940	3.9	Y	Y	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Espinoza

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/30/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 31Oct2018 Page 1 of 2
	Document No.: F-MN-L-213-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Jacobs

Project #:

WO# : 10462960

PM: JMG **Due Date:** 02/05/19

CLIENT: UPRR_CH2M

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7475 9396 9326

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.6 **Cooler Temp Corrected (°C):** 3.9

Temp should be above freezing to 6°C **Correction Factor:** ~~True~~ +0.3 JJ 1/31/19

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Date and Initials of Person Examining Contents: JJ 1/31/19

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☑ Yes ☐ No	1.
Chain of Custody Filled Out?	☑ Yes ☐ No	2.
Chain of Custody Relinquished?	☑ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☑ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☑ No	6.
Rush Turn Around Time Requested?	☑ Yes ☐ No	7.
Sufficient Volume?	☑ Yes ☐ No	8.
Correct Containers Used?	☑ Yes ☐ No	9.
-Pace Containers Used?	☑ Yes ☐ No	
Containers Intact?	☑ Yes ☐ No	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☑ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☑ Yes ☐ No	12.
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes ☐ No ☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes ☐ No ☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes ☐ No ☑ N/A	14.
Trip Blank Present?	☐ Yes ☑ No ☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☑ N/A	
Pace Trip Blank Lot # (if purchased): NA		

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: **Field Data Required?** ☐ Yes ☐ No

Comments/Resolution: Date/Time:

Project Manager Review: [signature] Date: 01/31/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by:

SCUR Exceptions: SAMPLE TEMPS. **Workorder #:** AVERAGE

KOT 01/31/19

Issue	~~Sample ID~~	~~Container Type/#~~
NO TEMP BLANK FOUND	3.8, 3.5, 3.6, 3.6	3.6

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH Upon Receipt	Date Preservation Adjusted	Time Preservation Adjusted	Amount of Additional Preservative Added	Lot # of Preservative Added	pH After Adjustment	Initials

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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March 08, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman WA-Grain Handling Faci
Pace Project No.:	10465801

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10465801001	**HB-1-1-022619**	Solid	02/26/19 10:30	03/05/19 08:45
10465801002	**HB-1-2-022619**	Solid	02/26/19 12:15	03/05/19 08:45
10465801003	**HB-1-3-022619**	Solid	02/26/19 14:30	03/05/19 08:45
10465801004	**HB-2-1-022719**	Solid	02/27/19 12:00	03/05/19 08:45
10465801005	**HB-2-2-022719**	Solid	02/27/19 13:00	03/05/19 08:45
10465801006	**HB-2-3-022719**	Solid	02/27/19 14:15	03/05/19 08:45
10465801007	**HB-3-1-022819**	Solid	02/28/19 11:00	03/05/19 08:45
10465801008	**HB-3-2-022819**	Solid	02/28/19 12:15	03/05/19 08:45
10465801009	**HB-3-3-022819**	Solid	02/28/19 14:30	03/05/19 08:45
10465801010	**Trip Blank**	Solid	02/28/19 00:00	03/05/19 08:45
10465801011	**Dup-01-022819**	Solid	02/28/19 12:00	03/05/19 08:45

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SAMPLE ANALYTE COUNT

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10465801001	**HB-1-1-022619**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801002	**HB-1-2-022619**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801003	**HB-1-3-022619**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801004	**HB-2-1-022719**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801005	**HB-2-2-022719**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801006	**HB-2-3-022719**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801007	**HB-3-1-022819**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801008	**HB-3-2-022819**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801009	**HB-3-3-022819**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10465801010	**Trip Blank**	EPA 8260B	CD2	51	PASI-M
10465801011	**Dup-01-022819**	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10465801001	**HB-1-1-022619**					
ASTM D2974	Percent Moisture	16.0	%	0.10	03/06/19 10:50	
10465801002	**HB-1-2-022619**					
ASTM D2974	Percent Moisture	16.5	%	0.10	03/06/19 10:50	
EPA 8260B	Carbon tetrachloride	0.063J	mg/kg	0.25	03/06/19 17:26	
EPA 8260B	Chloroform	0.34	mg/kg	0.062	03/06/19 17:26	
10465801003	**HB-1-3-022619**					
ASTM D2974	Percent Moisture	18.3	%	0.10	03/06/19 10:50	
10465801004	**HB-2-1-022719**					
ASTM D2974	Percent Moisture	19.3	%	0.10	03/06/19 10:50	
10465801005	**HB-2-2-022719**					
ASTM D2974	Percent Moisture	16.3	%	0.10	03/06/19 10:50	
10465801006	**HB-2-3-022719**					
ASTM D2974	Percent Moisture	16.9	%	0.10	03/06/19 10:51	
10465801007	**HB-3-1-022819**					
ASTM D2974	Percent Moisture	17.5	%	0.10	03/06/19 10:51	
10465801008	**HB-3-2-022819**					
ASTM D2974	Percent Moisture	17.3	%	0.10	03/06/19 10:51	
10465801009	**HB-3-3-022819**					
ASTM D2974	Percent Moisture	17.4	%	0.10	03/06/19 10:51	
EPA 8260B	Benzene	0.0051J	mg/kg	0.025	03/06/19 18:57	B
10465801010	**Trip Blank**					
EPA 8260B	Benzene	0.0045J	mg/kg	0.020	03/06/19 18:21	B
10465801011	**Dup-01-022819**					
ASTM D2974	Percent Moisture	17.1	%	0.10	03/06/19 10:52	

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: March 08, 2019

General Information:
11 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 592684

B: Analyte was detected in the associated method blank.
- BLANK for HBN 592684 [MSV/4783 (Lab ID: 3204755)
  - Benzene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 592684

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10465969001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 3204785)
  - Carbon tetrachloride
  - Chloroform
  - Vinyl acetate
- MSD (Lab ID: 3204786)

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Method: **EPA 8260B**
Description: 8260B MSV 5030 Med Level
Client: UPRR_CH2M/Jacobs
Date: March 08, 2019

QC Batch: 592684

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10465969001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Carbon tetrachloride
- Chloroform
- Vinyl acetate

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-1-1-022619 **Lab ID: 10465801001** Collected: 02/26/19 10:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**16.0**	%	0.10	0.10	1		03/06/19 10:50		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.027**	mg/kg	0.057	0.027	1	03/06/19 11:49	03/06/19 17:06	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.23	0.010	1	03/06/19 11:49	03/06/19 17:06	79-34-5	
1,1,2-Trichloroethane	**<0.0069**	mg/kg	0.057	0.0069	1	03/06/19 11:49	03/06/19 17:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.066**	mg/kg	0.57	0.066	1	03/06/19 11:49	03/06/19 17:06	76-13-1	
1,1-Dichloroethane	**<0.0064**	mg/kg	0.057	0.0064	1	03/06/19 11:49	03/06/19 17:06	75-34-3	
1,1-Dichloroethene	**<0.017**	mg/kg	0.057	0.017	1	03/06/19 11:49	03/06/19 17:06	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.057	0.013	1	03/06/19 11:49	03/06/19 17:06	120-82-1	
1,2,4-Trimethylbenzene	**<0.011**	mg/kg	0.057	0.011	1	03/06/19 11:49	03/06/19 17:06	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0060**	mg/kg	0.057	0.0060	1	03/06/19 11:49	03/06/19 17:06	106-93-4	
1,2-Dichlorobenzene	**<0.0023**	mg/kg	0.057	0.0023	1	03/06/19 11:49	03/06/19 17:06	95-50-1	
1,2-Dichloroethane	**<0.0063**	mg/kg	0.057	0.0063	1	03/06/19 11:49	03/06/19 17:06	107-06-2	
1,3,5-Trimethylbenzene	**<0.0091**	mg/kg	0.057	0.0091	1	03/06/19 11:49	03/06/19 17:06	108-67-8	
1,3-Dichlorobenzene	**<0.0021**	mg/kg	0.057	0.0021	1	03/06/19 11:49	03/06/19 17:06	541-73-1	
1,4-Dichlorobenzene	**<0.0036**	mg/kg	0.057	0.0036	1	03/06/19 11:49	03/06/19 17:06	106-46-7	
2-Butanone (MEK)	**<0.030**	mg/kg	0.29	0.030	1	03/06/19 11:49	03/06/19 17:06	78-93-3	
2-Hexanone	**<0.013**	mg/kg	0.29	0.013	1	03/06/19 11:49	03/06/19 17:06	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.29	0.012	1	03/06/19 11:49	03/06/19 17:06	108-10-1	
Acetone	**<0.36**	mg/kg	1.1	0.36	1	03/06/19 11:49	03/06/19 17:06	67-64-1	
Benzene	**<0.0032**	mg/kg	0.023	0.0032	1	03/06/19 11:49	03/06/19 17:06	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.057	0.020	1	03/06/19 11:49	03/06/19 17:06	75-27-4	
Bromoform	**<0.087**	mg/kg	0.23	0.087	1	03/06/19 11:49	03/06/19 17:06	75-25-2	
Bromomethane	**<0.067**	mg/kg	0.57	0.067	1	03/06/19 11:49	03/06/19 17:06	74-83-9	
Carbon tetrachloride	**<0.027**	mg/kg	0.23	0.027	1	03/06/19 11:49	03/06/19 17:06	56-23-5	
Chlorobenzene	**<0.0032**	mg/kg	0.057	0.0032	1	03/06/19 11:49	03/06/19 17:06	108-90-7	
Chloroethane	**<0.030**	mg/kg	0.57	0.030	1	03/06/19 11:49	03/06/19 17:06	75-00-3	
Chloroform	**<0.029**	mg/kg	0.057	0.029	1	03/06/19 11:49	03/06/19 17:06	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.23	0.014	1	03/06/19 11:49	03/06/19 17:06	74-87-3	
Dibromochloromethane	**<0.0066**	mg/kg	0.23	0.0066	1	03/06/19 11:49	03/06/19 17:06	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.23	0.019	1	03/06/19 11:49	03/06/19 17:06	75-71-8	
Ethylbenzene	**<0.0031**	mg/kg	0.057	0.0031	1	03/06/19 11:49	03/06/19 17:06	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.29	0.014	1	03/06/19 11:49	03/06/19 17:06	87-68-3	
Methyl-tert-butyl ether	**<0.0068**	mg/kg	0.057	0.0068	1	03/06/19 11:49	03/06/19 17:06	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.23	0.11	1	03/06/19 11:49	03/06/19 17:06	75-09-2	
Naphthalene	**<0.054**	mg/kg	0.23	0.054	1	03/06/19 11:49	03/06/19 17:06	91-20-3	
Styrene	**<0.0026**	mg/kg	0.057	0.0026	1	03/06/19 11:49	03/06/19 17:06	100-42-5	
Tetrachloroethene	**<0.020**	mg/kg	0.057	0.020	1	03/06/19 11:49	03/06/19 17:06	127-18-4	
Tetrahydrofuran	**<0.083**	mg/kg	2.3	0.083	1	03/06/19 11:49	03/06/19 17:06	109-99-9	
Toluene	**<0.014**	mg/kg	0.057	0.014	1	03/06/19 11:49	03/06/19 17:06	108-88-3	
Trichloroethene	**<0.0088**	mg/kg	0.057	0.0088	1	03/06/19 11:49	03/06/19 17:06	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.23	0.10	1	03/06/19 11:49	03/06/19 17:06	75-69-4	
Vinyl acetate	**<0.0066**	mg/kg	0.57	0.0066	1	03/06/19 11:49	03/06/19 17:06	108-05-4	
Vinyl chloride	**<0.011**	mg/kg	0.023	0.011	1	03/06/19 11:49	03/06/19 17:06	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-1-1-022619 **Lab ID: 10465801001** Collected: 02/26/19 10:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0095**	mg/kg	0.057	0.0095	1	03/06/19 11:49	03/06/19 17:06	156-59-2	
cis-1,3-Dichloropropene	**<0.0082**	mg/kg	0.057	0.0082	1	03/06/19 11:49	03/06/19 17:06	10061-01-5	
m&p-Xylene	**<0.0071**	mg/kg	0.11	0.0071	1	03/06/19 11:49	03/06/19 17:06	179601-23-1	
o-Xylene	**<0.013**	mg/kg	0.057	0.013	1	03/06/19 11:49	03/06/19 17:06	95-47-6	
trans-1,2-Dichloroethene	**<0.027**	mg/kg	0.057	0.027	1	03/06/19 11:49	03/06/19 17:06	156-60-5	
trans-1,3-Dichloropropene	**<0.0080**	mg/kg	0.057	0.0080	1	03/06/19 11:49	03/06/19 17:06	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1	03/06/19 11:49	03/06/19 17:06	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	03/06/19 11:49	03/06/19 17:06	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1	03/06/19 11:49	03/06/19 17:06	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-1-2-022619 **Lab ID: 10465801002** Collected: 02/26/19 12:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**16.5**	%	0.10	0.10	1		03/06/19 10:50		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.062	0.029	1	03/06/19 11:49	03/06/19 17:26	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.25	0.011	1	03/06/19 11:49	03/06/19 17:26	79-34-5	
1,1,2-Trichloroethane	**<0.0074**	mg/kg	0.062	0.0074	1	03/06/19 11:49	03/06/19 17:26	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.072**	mg/kg	0.62	0.072	1	03/06/19 11:49	03/06/19 17:26	76-13-1	
1,1-Dichloroethane	**<0.0069**	mg/kg	0.062	0.0069	1	03/06/19 11:49	03/06/19 17:26	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.062	0.019	1	03/06/19 11:49	03/06/19 17:26	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.062	0.014	1	03/06/19 11:49	03/06/19 17:26	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.062	0.012	1	03/06/19 11:49	03/06/19 17:26	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0065**	mg/kg	0.062	0.0065	1	03/06/19 11:49	03/06/19 17:26	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.062	0.0025	1	03/06/19 11:49	03/06/19 17:26	95-50-1	
1,2-Dichloroethane	**<0.0068**	mg/kg	0.062	0.0068	1	03/06/19 11:49	03/06/19 17:26	107-06-2	
1,3,5-Trimethylbenzene	**<0.0098**	mg/kg	0.062	0.0098	1	03/06/19 11:49	03/06/19 17:26	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.062	0.0022	1	03/06/19 11:49	03/06/19 17:26	541-73-1	
1,4-Dichlorobenzene	**<0.0038**	mg/kg	0.062	0.0038	1	03/06/19 11:49	03/06/19 17:26	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	03/06/19 11:49	03/06/19 17:26	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	03/06/19 11:49	03/06/19 17:26	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	03/06/19 11:49	03/06/19 17:26	108-10-1	
Acetone	**<0.38**	mg/kg	1.2	0.38	1	03/06/19 11:49	03/06/19 17:26	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	03/06/19 11:49	03/06/19 17:26	71-43-2	
Bromodichloromethane	**<0.021**	mg/kg	0.062	0.021	1	03/06/19 11:49	03/06/19 17:26	75-27-4	
Bromoform	**<0.093**	mg/kg	0.25	0.093	1	03/06/19 11:49	03/06/19 17:26	75-25-2	
Bromomethane	**<0.072**	mg/kg	0.62	0.072	1	03/06/19 11:49	03/06/19 17:26	74-83-9	
Carbon tetrachloride	**0.063J**	mg/kg	0.25	0.030	1	03/06/19 11:49	03/06/19 17:26	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.062	0.0035	1	03/06/19 11:49	03/06/19 17:26	108-90-7	
Chloroethane	**<0.032**	mg/kg	0.62	0.032	1	03/06/19 11:49	03/06/19 17:26	75-00-3	
Chloroform	**0.34**	mg/kg	0.062	0.031	1	03/06/19 11:49	03/06/19 17:26	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	03/06/19 11:49	03/06/19 17:26	74-87-3	
Dibromochloromethane	**<0.0072**	mg/kg	0.25	0.0072	1	03/06/19 11:49	03/06/19 17:26	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	03/06/19 11:49	03/06/19 17:26	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.062	0.0034	1	03/06/19 11:49	03/06/19 17:26	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	03/06/19 11:49	03/06/19 17:26	87-68-3	
Methyl-tert-butyl ether	**<0.0073**	mg/kg	0.062	0.0073	1	03/06/19 11:49	03/06/19 17:26	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	03/06/19 11:49	03/06/19 17:26	75-09-2	
Naphthalene	**<0.058**	mg/kg	0.25	0.058	1	03/06/19 11:49	03/06/19 17:26	91-20-3	
Styrene	**<0.0028**	mg/kg	0.062	0.0028	1	03/06/19 11:49	03/06/19 17:26	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.062	0.022	1	03/06/19 11:49	03/06/19 17:26	127-18-4	
Tetrahydrofuran	**<0.090**	mg/kg	2.5	0.090	1	03/06/19 11:49	03/06/19 17:26	109-99-9	
Toluene	**<0.015**	mg/kg	0.062	0.015	1	03/06/19 11:49	03/06/19 17:26	108-88-3	
Trichloroethene	**<0.0095**	mg/kg	0.062	0.0095	1	03/06/19 11:49	03/06/19 17:26	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	03/06/19 11:49	03/06/19 17:26	75-69-4	
Vinyl acetate	**<0.0071**	mg/kg	0.62	0.0071	1	03/06/19 11:49	03/06/19 17:26	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	03/06/19 11:49	03/06/19 17:26	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10465801

Sample: HB-1-2-022619 **Lab ID: 10465801002** Collected: 02/26/19 12:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.062	0.010	1	03/06/19 11:49	03/06/19 17:26	156-59-2	
cis-1,3-Dichloropropene	**<0.0088**	mg/kg	0.062	0.0088	1	03/06/19 11:49	03/06/19 17:26	10061-01-5	
m&p-Xylene	**<0.0076**	mg/kg	0.12	0.0076	1	03/06/19 11:49	03/06/19 17:26	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.062	0.014	1	03/06/19 11:49	03/06/19 17:26	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.062	0.029	1	03/06/19 11:49	03/06/19 17:26	156-60-5	
trans-1,3-Dichloropropene	**<0.0086**	mg/kg	0.062	0.0086	1	03/06/19 11:49	03/06/19 17:26	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1	03/06/19 11:49	03/06/19 17:26	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	03/06/19 11:49	03/06/19 17:26	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 17:26	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-1-3-022619 **Lab ID: 10465801003** Collected: 02/26/19 14:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.3**	%	0.10	0.10	1		03/06/19 10:50		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.028**	mg/kg	0.060	0.028	1	03/06/19 11:49	03/06/19 17:45	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.24	0.010	1	03/06/19 11:49	03/06/19 17:45	79-34-5	
1,1,2-Trichloroethane	**<0.0071**	mg/kg	0.060	0.0071	1	03/06/19 11:49	03/06/19 17:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.069**	mg/kg	0.60	0.069	1	03/06/19 11:49	03/06/19 17:45	76-13-1	
1,1-Dichloroethane	**<0.0067**	mg/kg	0.060	0.0067	1	03/06/19 11:49	03/06/19 17:45	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.060	0.018	1	03/06/19 11:49	03/06/19 17:45	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.060	0.013	1	03/06/19 11:49	03/06/19 17:45	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.060	0.012	1	03/06/19 11:49	03/06/19 17:45	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0063**	mg/kg	0.060	0.0063	1	03/06/19 11:49	03/06/19 17:45	106-93-4	
1,2-Dichlorobenzene	**<0.0024**	mg/kg	0.060	0.0024	1	03/06/19 11:49	03/06/19 17:45	95-50-1	
1,2-Dichloroethane	**<0.0065**	mg/kg	0.060	0.0065	1	03/06/19 11:49	03/06/19 17:45	107-06-2	
1,3,5-Trimethylbenzene	**<0.0095**	mg/kg	0.060	0.0095	1	03/06/19 11:49	03/06/19 17:45	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.060	0.0022	1	03/06/19 11:49	03/06/19 17:45	541-73-1	
1,4-Dichlorobenzene	**<0.0037**	mg/kg	0.060	0.0037	1	03/06/19 11:49	03/06/19 17:45	106-46-7	
2-Butanone (MEK)	**<0.032**	mg/kg	0.30	0.032	1	03/06/19 11:49	03/06/19 17:45	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.30	0.014	1	03/06/19 11:49	03/06/19 17:45	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.30	0.012	1	03/06/19 11:49	03/06/19 17:45	108-10-1	
Acetone	**<0.37**	mg/kg	1.2	0.37	1	03/06/19 11:49	03/06/19 17:45	67-64-1	
Benzene	**<0.0034**	mg/kg	0.024	0.0034	1	03/06/19 11:49	03/06/19 17:45	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.060	0.020	1	03/06/19 11:49	03/06/19 17:45	75-27-4	
Bromoform	**<0.090**	mg/kg	0.24	0.090	1	03/06/19 11:49	03/06/19 17:45	75-25-2	
Bromomethane	**<0.070**	mg/kg	0.60	0.070	1	03/06/19 11:49	03/06/19 17:45	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.24	0.028	1	03/06/19 11:49	03/06/19 17:45	56-23-5	
Chlorobenzene	**<0.0034**	mg/kg	0.060	0.0034	1	03/06/19 11:49	03/06/19 17:45	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.60	0.031	1	03/06/19 11:49	03/06/19 17:45	75-00-3	
Chloroform	**<0.030**	mg/kg	0.060	0.030	1	03/06/19 11:49	03/06/19 17:45	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.24	0.014	1	03/06/19 11:49	03/06/19 17:45	74-87-3	
Dibromochloromethane	**<0.0069**	mg/kg	0.24	0.0069	1	03/06/19 11:49	03/06/19 17:45	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.24	0.019	1	03/06/19 11:49	03/06/19 17:45	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.060	0.0032	1	03/06/19 11:49	03/06/19 17:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.30	0.015	1	03/06/19 11:49	03/06/19 17:45	87-68-3	
Methyl-tert-butyl ether	**<0.0071**	mg/kg	0.060	0.0071	1	03/06/19 11:49	03/06/19 17:45	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.24	0.11	1	03/06/19 11:49	03/06/19 17:45	75-09-2	
Naphthalene	**<0.056**	mg/kg	0.24	0.056	1	03/06/19 11:49	03/06/19 17:45	91-20-3	
Styrene	**<0.0027**	mg/kg	0.060	0.0027	1	03/06/19 11:49	03/06/19 17:45	100-42-5	
Tetrachloroethene	**<0.021**	mg/kg	0.060	0.021	1	03/06/19 11:49	03/06/19 17:45	127-18-4	
Tetrahydrofuran	**<0.087**	mg/kg	2.4	0.087	1	03/06/19 11:49	03/06/19 17:45	109-99-9	
Toluene	**<0.015**	mg/kg	0.060	0.015	1	03/06/19 11:49	03/06/19 17:45	108-88-3	
Trichloroethene	**<0.0092**	mg/kg	0.060	0.0092	1	03/06/19 11:49	03/06/19 17:45	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.24	0.10	1	03/06/19 11:49	03/06/19 17:45	75-69-4	
Vinyl acetate	**<0.0069**	mg/kg	0.60	0.0069	1	03/06/19 11:49	03/06/19 17:45	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.024	0.012	1	03/06/19 11:49	03/06/19 17:45	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-1-3-022619 **Lab ID: 10465801003** Collected: 02/26/19 14:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0099**	mg/kg	0.060	0.0099	1	03/06/19 11:49	03/06/19 17:45	156-59-2	
cis-1,3-Dichloropropene	**<0.0085**	mg/kg	0.060	0.0085	1	03/06/19 11:49	03/06/19 17:45	10061-01-5	
m&p-Xylene	**<0.0074**	mg/kg	0.12	0.0074	1	03/06/19 11:49	03/06/19 17:45	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.060	0.014	1	03/06/19 11:49	03/06/19 17:45	95-47-6	
trans-1,2-Dichloroethene	**<0.028**	mg/kg	0.060	0.028	1	03/06/19 11:49	03/06/19 17:45	156-60-5	
trans-1,3-Dichloropropene	**<0.0083**	mg/kg	0.060	0.0083	1	03/06/19 11:49	03/06/19 17:45	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1	03/06/19 11:49	03/06/19 17:45	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	03/06/19 11:49	03/06/19 17:45	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 17:45	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10465801

Sample: HB-2-1-022719 **Lab ID: 10465801004** Collected: 02/27/19 12:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**19.3**	%	0.10	0.10	1		03/06/19 10:50		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.028**	mg/kg	0.059	0.028	1	03/06/19 11:49	03/06/19 18:04	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.24	0.010	1	03/06/19 11:49	03/06/19 18:04	79-34-5	
1,1,2-Trichloroethane	**<0.0071**	mg/kg	0.059	0.0071	1	03/06/19 11:49	03/06/19 18:04	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.069**	mg/kg	0.59	0.069	1	03/06/19 11:49	03/06/19 18:04	76-13-1	
1,1-Dichloroethane	**<0.0067**	mg/kg	0.059	0.0067	1	03/06/19 11:49	03/06/19 18:04	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.059	0.018	1	03/06/19 11:49	03/06/19 18:04	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.059	0.013	1	03/06/19 11:49	03/06/19 18:04	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.059	0.012	1	03/06/19 11:49	03/06/19 18:04	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0062**	mg/kg	0.059	0.0062	1	03/06/19 11:49	03/06/19 18:04	106-93-4	
1,2-Dichlorobenzene	**<0.0024**	mg/kg	0.059	0.0024	1	03/06/19 11:49	03/06/19 18:04	95-50-1	
1,2-Dichloroethane	**<0.0065**	mg/kg	0.059	0.0065	1	03/06/19 11:49	03/06/19 18:04	107-06-2	
1,3,5-Trimethylbenzene	**<0.0095**	mg/kg	0.059	0.0095	1	03/06/19 11:49	03/06/19 18:04	108-67-8	
1,3-Dichlorobenzene	**<0.0022**	mg/kg	0.059	0.0022	1	03/06/19 11:49	03/06/19 18:04	541-73-1	
1,4-Dichlorobenzene	**<0.0037**	mg/kg	0.059	0.0037	1	03/06/19 11:49	03/06/19 18:04	106-46-7	
2-Butanone (MEK)	**<0.032**	mg/kg	0.30	0.032	1	03/06/19 11:49	03/06/19 18:04	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.30	0.014	1	03/06/19 11:49	03/06/19 18:04	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.30	0.012	1	03/06/19 11:49	03/06/19 18:04	108-10-1	
Acetone	**<0.37**	mg/kg	1.2	0.37	1	03/06/19 11:49	03/06/19 18:04	67-64-1	
Benzene	**<0.0033**	mg/kg	0.024	0.0033	1	03/06/19 11:49	03/06/19 18:04	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.059	0.020	1	03/06/19 11:49	03/06/19 18:04	75-27-4	
Bromoform	**<0.090**	mg/kg	0.24	0.090	1	03/06/19 11:49	03/06/19 18:04	75-25-2	
Bromomethane	**<0.069**	mg/kg	0.59	0.069	1	03/06/19 11:49	03/06/19 18:04	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.24	0.028	1	03/06/19 11:49	03/06/19 18:04	56-23-5	
Chlorobenzene	**<0.0033**	mg/kg	0.059	0.0033	1	03/06/19 11:49	03/06/19 18:04	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.59	0.031	1	03/06/19 11:49	03/06/19 18:04	75-00-3	
Chloroform	**<0.030**	mg/kg	0.059	0.030	1	03/06/19 11:49	03/06/19 18:04	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.24	0.014	1	03/06/19 11:49	03/06/19 18:04	74-87-3	
Dibromochloromethane	**<0.0069**	mg/kg	0.24	0.0069	1	03/06/19 11:49	03/06/19 18:04	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.24	0.019	1	03/06/19 11:49	03/06/19 18:04	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	03/06/19 11:49	03/06/19 18:04	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.30	0.014	1	03/06/19 11:49	03/06/19 18:04	87-68-3	
Methyl-tert-butyl ether	**<0.0071**	mg/kg	0.059	0.0071	1	03/06/19 11:49	03/06/19 18:04	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.24	0.11	1	03/06/19 11:49	03/06/19 18:04	75-09-2	
Naphthalene	**<0.056**	mg/kg	0.24	0.056	1	03/06/19 11:49	03/06/19 18:04	91-20-3	
Styrene	**<0.0027**	mg/kg	0.059	0.0027	1	03/06/19 11:49	03/06/19 18:04	100-42-5	
Tetrachloroethene	**<0.021**	mg/kg	0.059	0.021	1	03/06/19 11:49	03/06/19 18:04	127-18-4	
Tetrahydrofuran	**<0.086**	mg/kg	2.4	0.086	1	03/06/19 11:49	03/06/19 18:04	109-99-9	
Toluene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 18:04	108-88-3	
Trichloroethene	**<0.0091**	mg/kg	0.059	0.0091	1	03/06/19 11:49	03/06/19 18:04	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.24	0.10	1	03/06/19 11:49	03/06/19 18:04	75-69-4	
Vinyl acetate	**<0.0069**	mg/kg	0.59	0.0069	1	03/06/19 11:49	03/06/19 18:04	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.024	0.012	1	03/06/19 11:49	03/06/19 18:04	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-2-1-022719 **Lab ID: 10465801004** Collected: 02/27/19 12:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0098**	mg/kg	0.059	0.0098	1	03/06/19 11:49	03/06/19 18:04	156-59-2	
cis-1,3-Dichloropropene	**<0.0085**	mg/kg	0.059	0.0085	1	03/06/19 11:49	03/06/19 18:04	10061-01-5	
m&p-Xylene	**<0.0073**	mg/kg	0.12	0.0073	1	03/06/19 11:49	03/06/19 18:04	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 18:04	95-47-6	
trans-1,2-Dichloroethene	**<0.028**	mg/kg	0.059	0.028	1	03/06/19 11:49	03/06/19 18:04	156-60-5	
trans-1,3-Dichloropropene	**<0.0082**	mg/kg	0.059	0.0082	1	03/06/19 11:49	03/06/19 18:04	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1	03/06/19 11:49	03/06/19 18:04	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	03/06/19 11:49	03/06/19 18:04	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 18:04	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-2-2-022719 **Lab ID: 10465801005** Collected: 02/27/19 13:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**16.3**	%	0.10	0.10	1		03/06/19 10:50		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.027**	mg/kg	0.058	0.027	1	03/06/19 11:49	03/06/19 18:24	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.23	0.010	1	03/06/19 11:49	03/06/19 18:24	79-34-5	
1,1,2-Trichloroethane	**<0.0069**	mg/kg	0.058	0.0069	1	03/06/19 11:49	03/06/19 18:24	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.067**	mg/kg	0.58	0.067	1	03/06/19 11:49	03/06/19 18:24	76-13-1	
1,1-Dichloroethane	**<0.0065**	mg/kg	0.058	0.0065	1	03/06/19 11:49	03/06/19 18:24	75-34-3	
1,1-Dichloroethene	**<0.017**	mg/kg	0.058	0.017	1	03/06/19 11:49	03/06/19 18:24	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.058	0.013	1	03/06/19 11:49	03/06/19 18:24	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.058	0.012	1	03/06/19 11:49	03/06/19 18:24	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0061**	mg/kg	0.058	0.0061	1	03/06/19 11:49	03/06/19 18:24	106-93-4	
1,2-Dichlorobenzene	**<0.0023**	mg/kg	0.058	0.0023	1	03/06/19 11:49	03/06/19 18:24	95-50-1	
1,2-Dichloroethane	**<0.0064**	mg/kg	0.058	0.0064	1	03/06/19 11:49	03/06/19 18:24	107-06-2	
1,3,5-Trimethylbenzene	**<0.0092**	mg/kg	0.058	0.0092	1	03/06/19 11:49	03/06/19 18:24	108-67-8	
1,3-Dichlorobenzene	**<0.0021**	mg/kg	0.058	0.0021	1	03/06/19 11:49	03/06/19 18:24	541-73-1	
1,4-Dichlorobenzene	**<0.0036**	mg/kg	0.058	0.0036	1	03/06/19 11:49	03/06/19 18:24	106-46-7	
2-Butanone (MEK)	**<0.031**	mg/kg	0.29	0.031	1	03/06/19 11:49	03/06/19 18:24	78-93-3	
2-Hexanone	**<0.013**	mg/kg	0.29	0.013	1	03/06/19 11:49	03/06/19 18:24	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.29	0.012	1	03/06/19 11:49	03/06/19 18:24	108-10-1	
Acetone	**<0.36**	mg/kg	1.2	0.36	1	03/06/19 11:49	03/06/19 18:24	67-64-1	
Benzene	**<0.0033**	mg/kg	0.023	0.0033	1	03/06/19 11:49	03/06/19 18:24	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.058	0.020	1	03/06/19 11:49	03/06/19 18:24	75-27-4	
Bromoform	**<0.088**	mg/kg	0.23	0.088	1	03/06/19 11:49	03/06/19 18:24	75-25-2	
Bromomethane	**<0.068**	mg/kg	0.58	0.068	1	03/06/19 11:49	03/06/19 18:24	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.23	0.028	1	03/06/19 11:49	03/06/19 18:24	56-23-5	
Chlorobenzene	**<0.0033**	mg/kg	0.058	0.0033	1	03/06/19 11:49	03/06/19 18:24	108-90-7	
Chloroethane	**<0.030**	mg/kg	0.58	0.030	1	03/06/19 11:49	03/06/19 18:24	75-00-3	
Chloroform	**<0.029**	mg/kg	0.058	0.029	1	03/06/19 11:49	03/06/19 18:24	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.23	0.014	1	03/06/19 11:49	03/06/19 18:24	74-87-3	
Dibromochloromethane	**<0.0067**	mg/kg	0.23	0.0067	1	03/06/19 11:49	03/06/19 18:24	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.23	0.019	1	03/06/19 11:49	03/06/19 18:24	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.058	0.0032	1	03/06/19 11:49	03/06/19 18:24	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.29	0.014	1	03/06/19 11:49	03/06/19 18:24	87-68-3	
Methyl-tert-butyl ether	**<0.0069**	mg/kg	0.058	0.0069	1	03/06/19 11:49	03/06/19 18:24	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.23	0.11	1	03/06/19 11:49	03/06/19 18:24	75-09-2	
Naphthalene	**<0.054**	mg/kg	0.23	0.054	1	03/06/19 11:49	03/06/19 18:24	91-20-3	
Styrene	**<0.0026**	mg/kg	0.058	0.0026	1	03/06/19 11:49	03/06/19 18:24	100-42-5	
Tetrachloroethene	**<0.020**	mg/kg	0.058	0.020	1	03/06/19 11:49	03/06/19 18:24	127-18-4	
Tetrahydrofuran	**<0.084**	mg/kg	2.3	0.084	1	03/06/19 11:49	03/06/19 18:24	109-99-9	
Toluene	**<0.014**	mg/kg	0.058	0.014	1	03/06/19 11:49	03/06/19 18:24	108-88-3	
Trichloroethene	**<0.0089**	mg/kg	0.058	0.0089	1	03/06/19 11:49	03/06/19 18:24	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.23	0.10	1	03/06/19 11:49	03/06/19 18:24	75-69-4	
Vinyl acetate	**<0.0067**	mg/kg	0.58	0.0067	1	03/06/19 11:49	03/06/19 18:24	108-05-4	
Vinyl chloride	**<0.011**	mg/kg	0.023	0.011	1	03/06/19 11:49	03/06/19 18:24	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-2-2-022719 **Lab ID: 10465801005** Collected: 02/27/19 13:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0096**	mg/kg	0.058	0.0096	1	03/06/19 11:49	03/06/19 18:24	156-59-2	
cis-1,3-Dichloropropene	**<0.0083**	mg/kg	0.058	0.0083	1	03/06/19 11:49	03/06/19 18:24	10061-01-5	
m&p-Xylene	**<0.0072**	mg/kg	0.12	0.0072	1	03/06/19 11:49	03/06/19 18:24	179601-23-1	
o-Xylene	**<0.013**	mg/kg	0.058	0.013	1	03/06/19 11:49	03/06/19 18:24	95-47-6	
trans-1,2-Dichloroethene	**<0.027**	mg/kg	0.058	0.027	1	03/06/19 11:49	03/06/19 18:24	156-60-5	
trans-1,3-Dichloropropene	**<0.0081**	mg/kg	0.058	0.0081	1	03/06/19 11:49	03/06/19 18:24	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1	03/06/19 11:49	03/06/19 18:24	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 18:24	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	03/06/19 11:49	03/06/19 18:24	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-2-3-022719 **Lab ID: 10465801006** Collected: 02/27/19 14:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**16.9**	%	0.10	0.10	1		03/06/19 10:51		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.063	0.029	1	03/06/19 11:49	03/06/19 18:43	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.25	0.011	1	03/06/19 11:49	03/06/19 18:43	79-34-5	
1,1,2-Trichloroethane	**<0.0075**	mg/kg	0.063	0.0075	1	03/06/19 11:49	03/06/19 18:43	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.073**	mg/kg	0.63	0.073	1	03/06/19 11:49	03/06/19 18:43	76-13-1	
1,1-Dichloroethane	**<0.0070**	mg/kg	0.063	0.0070	1	03/06/19 11:49	03/06/19 18:43	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.063	0.019	1	03/06/19 11:49	03/06/19 18:43	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.063	0.014	1	03/06/19 11:49	03/06/19 18:43	120-82-1	
1,2,4-Trimethylbenzene	**<0.013**	mg/kg	0.063	0.013	1	03/06/19 11:49	03/06/19 18:43	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0066**	mg/kg	0.063	0.0066	1	03/06/19 11:49	03/06/19 18:43	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.063	0.0025	1	03/06/19 11:49	03/06/19 18:43	95-50-1	
1,2-Dichloroethane	**<0.0069**	mg/kg	0.063	0.0069	1	03/06/19 11:49	03/06/19 18:43	107-06-2	
1,3,5-Trimethylbenzene	**<0.010**	mg/kg	0.063	0.010	1	03/06/19 11:49	03/06/19 18:43	108-67-8	
1,3-Dichlorobenzene	**<0.0023**	mg/kg	0.063	0.0023	1	03/06/19 11:49	03/06/19 18:43	541-73-1	
1,4-Dichlorobenzene	**<0.0039**	mg/kg	0.063	0.0039	1	03/06/19 11:49	03/06/19 18:43	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	03/06/19 11:49	03/06/19 18:43	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	03/06/19 11:49	03/06/19 18:43	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	03/06/19 11:49	03/06/19 18:43	108-10-1	
Acetone	**<0.39**	mg/kg	1.3	0.39	1	03/06/19 11:49	03/06/19 18:43	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	03/06/19 11:49	03/06/19 18:43	71-43-2	
Bromodichloromethane	**<0.021**	mg/kg	0.063	0.021	1	03/06/19 11:49	03/06/19 18:43	75-27-4	
Bromoform	**<0.095**	mg/kg	0.25	0.095	1	03/06/19 11:49	03/06/19 18:43	75-25-2	
Bromomethane	**<0.073**	mg/kg	0.63	0.073	1	03/06/19 11:49	03/06/19 18:43	74-83-9	
Carbon tetrachloride	**<0.030**	mg/kg	0.25	0.030	1	03/06/19 11:49	03/06/19 18:43	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.063	0.0035	1	03/06/19 11:49	03/06/19 18:43	108-90-7	
Chloroethane	**<0.033**	mg/kg	0.63	0.033	1	03/06/19 11:49	03/06/19 18:43	75-00-3	
Chloroform	**<0.031**	mg/kg	0.063	0.031	1	03/06/19 11:49	03/06/19 18:43	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	03/06/19 11:49	03/06/19 18:43	74-87-3	
Dibromochloromethane	**<0.0073**	mg/kg	0.25	0.0073	1	03/06/19 11:49	03/06/19 18:43	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	03/06/19 11:49	03/06/19 18:43	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.063	0.0034	1	03/06/19 11:49	03/06/19 18:43	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	03/06/19 11:49	03/06/19 18:43	87-68-3	
Methyl-tert-butyl ether	**<0.0074**	mg/kg	0.063	0.0074	1	03/06/19 11:49	03/06/19 18:43	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	03/06/19 11:49	03/06/19 18:43	75-09-2	
Naphthalene	**<0.059**	mg/kg	0.25	0.059	1	03/06/19 11:49	03/06/19 18:43	91-20-3	
Styrene	**<0.0029**	mg/kg	0.063	0.0029	1	03/06/19 11:49	03/06/19 18:43	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.063	0.022	1	03/06/19 11:49	03/06/19 18:43	127-18-4	
Tetrahydrofuran	**<0.091**	mg/kg	2.5	0.091	1	03/06/19 11:49	03/06/19 18:43	109-99-9	
Toluene	**<0.015**	mg/kg	0.063	0.015	1	03/06/19 11:49	03/06/19 18:43	108-88-3	
Trichloroethene	**<0.0097**	mg/kg	0.063	0.0097	1	03/06/19 11:49	03/06/19 18:43	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	03/06/19 11:49	03/06/19 18:43	75-69-4	
Vinyl acetate	**<0.0072**	mg/kg	0.63	0.0072	1	03/06/19 11:49	03/06/19 18:43	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	03/06/19 11:49	03/06/19 18:43	75-01-4	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10465801

Sample: HB-2-3-022719 **Lab ID: 10465801006** Collected: 02/27/19 14:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.063	0.010	1	03/06/19 11:49	03/06/19 18:43	156-59-2	
cis-1,3-Dichloropropene	**<0.0090**	mg/kg	0.063	0.0090	1	03/06/19 11:49	03/06/19 18:43	10061-01-5	
m&p-Xylene	**<0.0077**	mg/kg	0.13	0.0077	1	03/06/19 11:49	03/06/19 18:43	179601-23-1	
o-Xylene	**<0.015**	mg/kg	0.063	0.015	1	03/06/19 11:49	03/06/19 18:43	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.063	0.029	1	03/06/19 11:49	03/06/19 18:43	156-60-5	
trans-1,3-Dichloropropene	**<0.0087**	mg/kg	0.063	0.0087	1	03/06/19 11:49	03/06/19 18:43	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1	03/06/19 11:49	03/06/19 18:43	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	03/06/19 11:49	03/06/19 18:43	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	03/06/19 11:49	03/06/19 18:43	460-00-4	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-3-1-022819 **Lab ID: 10465801007** Collected: 02/28/19 11:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.5**	%	0.10	0.10	1		03/06/19 10:51		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.028**	mg/kg	0.059	0.028	1	03/06/19 11:49	03/06/19 19:03	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.24	0.010	1	03/06/19 11:49	03/06/19 19:03	79-34-5	
1,1,2-Trichloroethane	**<0.0071**	mg/kg	0.059	0.0071	1	03/06/19 11:49	03/06/19 19:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.068**	mg/kg	0.59	0.068	1	03/06/19 11:49	03/06/19 19:03	76-13-1	
1,1-Dichloroethane	**<0.0066**	mg/kg	0.059	0.0066	1	03/06/19 11:49	03/06/19 19:03	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.059	0.018	1	03/06/19 11:49	03/06/19 19:03	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.059	0.013	1	03/06/19 11:49	03/06/19 19:03	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.059	0.012	1	03/06/19 11:49	03/06/19 19:03	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0062**	mg/kg	0.059	0.0062	1	03/06/19 11:49	03/06/19 19:03	106-93-4	
1,2-Dichlorobenzene	**<0.0024**	mg/kg	0.059	0.0024	1	03/06/19 11:49	03/06/19 19:03	95-50-1	
1,2-Dichloroethane	**<0.0065**	mg/kg	0.059	0.0065	1	03/06/19 11:49	03/06/19 19:03	107-06-2	
1,3,5-Trimethylbenzene	**<0.0094**	mg/kg	0.059	0.0094	1	03/06/19 11:49	03/06/19 19:03	108-67-8	
1,3-Dichlorobenzene	**<0.0021**	mg/kg	0.059	0.0021	1	03/06/19 11:49	03/06/19 19:03	541-73-1	
1,4-Dichlorobenzene	**<0.0037**	mg/kg	0.059	0.0037	1	03/06/19 11:49	03/06/19 19:03	106-46-7	
2-Butanone (MEK)	**<0.031**	mg/kg	0.30	0.031	1	03/06/19 11:49	03/06/19 19:03	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.30	0.014	1	03/06/19 11:49	03/06/19 19:03	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.30	0.012	1	03/06/19 11:49	03/06/19 19:03	108-10-1	
Acetone	**<0.37**	mg/kg	1.2	0.37	1	03/06/19 11:49	03/06/19 19:03	67-64-1	
Benzene	**<0.0033**	mg/kg	0.024	0.0033	1	03/06/19 11:49	03/06/19 19:03	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.059	0.020	1	03/06/19 11:49	03/06/19 19:03	75-27-4	
Bromoform	**<0.089**	mg/kg	0.24	0.089	1	03/06/19 11:49	03/06/19 19:03	75-25-2	
Bromomethane	**<0.069**	mg/kg	0.59	0.069	1	03/06/19 11:49	03/06/19 19:03	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.24	0.028	1	03/06/19 11:49	03/06/19 19:03	56-23-5	
Chlorobenzene	**<0.0033**	mg/kg	0.059	0.0033	1	03/06/19 11:49	03/06/19 19:03	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.59	0.031	1	03/06/19 11:49	03/06/19 19:03	75-00-3	
Chloroform	**<0.030**	mg/kg	0.059	0.030	1	03/06/19 11:49	03/06/19 19:03	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.24	0.014	1	03/06/19 11:49	03/06/19 19:03	74-87-3	
Dibromochloromethane	**<0.0068**	mg/kg	0.24	0.0068	1	03/06/19 11:49	03/06/19 19:03	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.24	0.019	1	03/06/19 11:49	03/06/19 19:03	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	03/06/19 11:49	03/06/19 19:03	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.30	0.014	1	03/06/19 11:49	03/06/19 19:03	87-68-3	
Methyl-tert-butyl ether	**<0.0070**	mg/kg	0.059	0.0070	1	03/06/19 11:49	03/06/19 19:03	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.24	0.11	1	03/06/19 11:49	03/06/19 19:03	75-09-2	
Naphthalene	**<0.055**	mg/kg	0.24	0.055	1	03/06/19 11:49	03/06/19 19:03	91-20-3	
Styrene	**<0.0027**	mg/kg	0.059	0.0027	1	03/06/19 11:49	03/06/19 19:03	100-42-5	
Tetrachloroethene	**<0.021**	mg/kg	0.059	0.021	1	03/06/19 11:49	03/06/19 19:03	127-18-4	
Tetrahydrofuran	**<0.086**	mg/kg	2.4	0.086	1	03/06/19 11:49	03/06/19 19:03	109-99-9	
Toluene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 19:03	108-88-3	
Trichloroethene	**<0.0091**	mg/kg	0.059	0.0091	1	03/06/19 11:49	03/06/19 19:03	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.24	0.10	1	03/06/19 11:49	03/06/19 19:03	75-69-4	
Vinyl acetate	**<0.0068**	mg/kg	0.59	0.0068	1	03/06/19 11:49	03/06/19 19:03	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.024	0.012	1	03/06/19 11:49	03/06/19 19:03	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-3-1-022819 **Lab ID: 10465801007** Collected: 02/28/19 11:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0098**	mg/kg	0.059	0.0098	1	03/06/19 11:49	03/06/19 19:03	156-59-2	
cis-1,3-Dichloropropene	**<0.0085**	mg/kg	0.059	0.0085	1	03/06/19 11:49	03/06/19 19:03	10061-01-5	
m&p-Xylene	**<0.0073**	mg/kg	0.12	0.0073	1	03/06/19 11:49	03/06/19 19:03	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 19:03	95-47-6	
trans-1,2-Dichloroethene	**<0.028**	mg/kg	0.059	0.028	1	03/06/19 11:49	03/06/19 19:03	156-60-5	
trans-1,3-Dichloropropene	**<0.0082**	mg/kg	0.059	0.0082	1	03/06/19 11:49	03/06/19 19:03	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1	03/06/19 11:49	03/06/19 19:03	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	03/06/19 11:49	03/06/19 19:03	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 19:03	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-3-2-022819 **Lab ID: 10465801008** Collected: 02/28/19 12:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.3**	%	0.10	0.10	1		03/06/19 10:51		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.027**	mg/kg	0.059	0.027	1	03/06/19 11:49	03/06/19 19:23	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.010**	mg/kg	0.24	0.010	1	03/06/19 11:49	03/06/19 19:23	79-34-5	
1,1,2-Trichloroethane	**<0.0070**	mg/kg	0.059	0.0070	1	03/06/19 11:49	03/06/19 19:23	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.068**	mg/kg	0.59	0.068	1	03/06/19 11:49	03/06/19 19:23	76-13-1	
1,1-Dichloroethane	**<0.0066**	mg/kg	0.059	0.0066	1	03/06/19 11:49	03/06/19 19:23	75-34-3	
1,1-Dichloroethene	**<0.018**	mg/kg	0.059	0.018	1	03/06/19 11:49	03/06/19 19:23	75-35-4	
1,2,4-Trichlorobenzene	**<0.013**	mg/kg	0.059	0.013	1	03/06/19 11:49	03/06/19 19:23	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.059	0.012	1	03/06/19 11:49	03/06/19 19:23	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0062**	mg/kg	0.059	0.0062	1	03/06/19 11:49	03/06/19 19:23	106-93-4	
1,2-Dichlorobenzene	**<0.0024**	mg/kg	0.059	0.0024	1	03/06/19 11:49	03/06/19 19:23	95-50-1	
1,2-Dichloroethane	**<0.0065**	mg/kg	0.059	0.0065	1	03/06/19 11:49	03/06/19 19:23	107-06-2	
1,3,5-Trimethylbenzene	**<0.0094**	mg/kg	0.059	0.0094	1	03/06/19 11:49	03/06/19 19:23	108-67-8	
1,3-Dichlorobenzene	**<0.0021**	mg/kg	0.059	0.0021	1	03/06/19 11:49	03/06/19 19:23	541-73-1	
1,4-Dichlorobenzene	**<0.0036**	mg/kg	0.059	0.0036	1	03/06/19 11:49	03/06/19 19:23	106-46-7	
2-Butanone (MEK)	**<0.031**	mg/kg	0.29	0.031	1	03/06/19 11:49	03/06/19 19:23	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.29	0.014	1	03/06/19 11:49	03/06/19 19:23	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.012**	mg/kg	0.29	0.012	1	03/06/19 11:49	03/06/19 19:23	108-10-1	
Acetone	**<0.37**	mg/kg	1.2	0.37	1	03/06/19 11:49	03/06/19 19:23	67-64-1	
Benzene	**<0.0033**	mg/kg	0.024	0.0033	1	03/06/19 11:49	03/06/19 19:23	71-43-2	
Bromodichloromethane	**<0.020**	mg/kg	0.059	0.020	1	03/06/19 11:49	03/06/19 19:23	75-27-4	
Bromoform	**<0.089**	mg/kg	0.24	0.089	1	03/06/19 11:49	03/06/19 19:23	75-25-2	
Bromomethane	**<0.069**	mg/kg	0.59	0.069	1	03/06/19 11:49	03/06/19 19:23	74-83-9	
Carbon tetrachloride	**<0.028**	mg/kg	0.24	0.028	1	03/06/19 11:49	03/06/19 19:23	56-23-5	
Chlorobenzene	**<0.0033**	mg/kg	0.059	0.0033	1	03/06/19 11:49	03/06/19 19:23	108-90-7	
Chloroethane	**<0.031**	mg/kg	0.59	0.031	1	03/06/19 11:49	03/06/19 19:23	75-00-3	
Chloroform	**<0.029**	mg/kg	0.059	0.029	1	03/06/19 11:49	03/06/19 19:23	67-66-3	
Chloromethane	**<0.014**	mg/kg	0.24	0.014	1	03/06/19 11:49	03/06/19 19:23	74-87-3	
Dibromochloromethane	**<0.0068**	mg/kg	0.24	0.0068	1	03/06/19 11:49	03/06/19 19:23	124-48-1	
Dichlorodifluoromethane	**<0.019**	mg/kg	0.24	0.019	1	03/06/19 11:49	03/06/19 19:23	75-71-8	
Ethylbenzene	**<0.0032**	mg/kg	0.059	0.0032	1	03/06/19 11:49	03/06/19 19:23	100-41-4	
Hexachloro-1,3-butadiene	**<0.014**	mg/kg	0.29	0.014	1	03/06/19 11:49	03/06/19 19:23	87-68-3	
Methyl-tert-butyl ether	**<0.0070**	mg/kg	0.059	0.0070	1	03/06/19 11:49	03/06/19 19:23	1634-04-4	
Methylene Chloride	**<0.11**	mg/kg	0.24	0.11	1	03/06/19 11:49	03/06/19 19:23	75-09-2	
Naphthalene	**<0.055**	mg/kg	0.24	0.055	1	03/06/19 11:49	03/06/19 19:23	91-20-3	
Styrene	**<0.0027**	mg/kg	0.059	0.0027	1	03/06/19 11:49	03/06/19 19:23	100-42-5	
Tetrachloroethene	**<0.021**	mg/kg	0.059	0.021	1	03/06/19 11:49	03/06/19 19:23	127-18-4	
Tetrahydrofuran	**<0.085**	mg/kg	2.4	0.085	1	03/06/19 11:49	03/06/19 19:23	109-99-9	
Toluene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 19:23	108-88-3	
Trichloroethene	**<0.0091**	mg/kg	0.059	0.0091	1	03/06/19 11:49	03/06/19 19:23	79-01-6	
Trichlorofluoromethane	**<0.10**	mg/kg	0.24	0.10	1	03/06/19 11:49	03/06/19 19:23	75-69-4	
Vinyl acetate	**<0.0068**	mg/kg	0.59	0.0068	1	03/06/19 11:49	03/06/19 19:23	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.024	0.012	1	03/06/19 11:49	03/06/19 19:23	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-3-2-022819 **Lab ID: 10465801008** Collected: 02/28/19 12:15 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.0097**	mg/kg	0.059	0.0097	1	03/06/19 11:49	03/06/19 19:23	156-59-2	
cis-1,3-Dichloropropene	**<0.0084**	mg/kg	0.059	0.0084	1	03/06/19 11:49	03/06/19 19:23	10061-01-5	
m&p-Xylene	**<0.0073**	mg/kg	0.12	0.0073	1	03/06/19 11:49	03/06/19 19:23	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.059	0.014	1	03/06/19 11:49	03/06/19 19:23	95-47-6	
trans-1,2-Dichloroethene	**<0.028**	mg/kg	0.059	0.028	1	03/06/19 11:49	03/06/19 19:23	156-60-5	
trans-1,3-Dichloropropene	**<0.0082**	mg/kg	0.059	0.0082	1	03/06/19 11:49	03/06/19 19:23	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1	03/06/19 11:49	03/06/19 19:23	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	03/06/19 11:49	03/06/19 19:23	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 11:49	03/06/19 19:23	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: HB-3-3-022819 **Lab ID: 10465801009** Collected: 02/28/19 14:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.4**	%	0.10	0.10	1		03/06/19 10:51		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.063	0.029	1	03/06/19 15:55	03/06/19 18:57	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.063	0.011	1	03/06/19 15:55	03/06/19 18:57	79-34-5	
1,1,2-Trichloroethane	**<0.0075**	mg/kg	0.063	0.0075	1	03/06/19 15:55	03/06/19 18:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.073**	mg/kg	0.25	0.073	1	03/06/19 15:55	03/06/19 18:57	76-13-1	
1,1-Dichloroethane	**<0.0070**	mg/kg	0.063	0.0070	1	03/06/19 15:55	03/06/19 18:57	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.25	0.019	1	03/06/19 15:55	03/06/19 18:57	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.063	0.014	1	03/06/19 15:55	03/06/19 18:57	120-82-1	
1,2,4-Trimethylbenzene	**<0.013**	mg/kg	0.063	0.013	1	03/06/19 15:55	03/06/19 18:57	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0066**	mg/kg	0.063	0.0066	1	03/06/19 15:55	03/06/19 18:57	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.063	0.0025	1	03/06/19 15:55	03/06/19 18:57	95-50-1	
1,2-Dichloroethane	**<0.0069**	mg/kg	0.063	0.0069	1	03/06/19 15:55	03/06/19 18:57	107-06-2	
1,3,5-Trimethylbenzene	**<0.010**	mg/kg	0.063	0.010	1	03/06/19 15:55	03/06/19 18:57	108-67-8	
1,3-Dichlorobenzene	**<0.0023**	mg/kg	0.063	0.0023	1	03/06/19 15:55	03/06/19 18:57	541-73-1	
1,4-Dichlorobenzene	**<0.0039**	mg/kg	0.063	0.0039	1	03/06/19 15:55	03/06/19 18:57	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	03/06/19 15:55	03/06/19 18:57	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	03/06/19 15:55	03/06/19 18:57	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	03/06/19 15:55	03/06/19 18:57	108-10-1	
Acetone	**<0.39**	mg/kg	1.3	0.39	1	03/06/19 15:55	03/06/19 18:57	67-64-1	
Benzene	**0.0051J**	mg/kg	0.025	0.0035	1	03/06/19 15:55	03/06/19 18:57	71-43-2	B
Bromodichloromethane	**<0.021**	mg/kg	0.063	0.021	1	03/06/19 15:55	03/06/19 18:57	75-27-4	
Bromoform	**<0.095**	mg/kg	0.25	0.095	1	03/06/19 15:55	03/06/19 18:57	75-25-2	
Bromomethane	**<0.073**	mg/kg	0.63	0.073	1	03/06/19 15:55	03/06/19 18:57	74-83-9	
Carbon tetrachloride	**<0.030**	mg/kg	0.063	0.030	1	03/06/19 15:55	03/06/19 18:57	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.063	0.0035	1	03/06/19 15:55	03/06/19 18:57	108-90-7	
Chloroethane	**<0.033**	mg/kg	0.63	0.033	1	03/06/19 15:55	03/06/19 18:57	75-00-3	
Chloroform	**<0.031**	mg/kg	0.063	0.031	1	03/06/19 15:55	03/06/19 18:57	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	03/06/19 15:55	03/06/19 18:57	74-87-3	
Dibromochloromethane	**<0.0073**	mg/kg	0.25	0.0073	1	03/06/19 15:55	03/06/19 18:57	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	03/06/19 15:55	03/06/19 18:57	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.063	0.0034	1	03/06/19 15:55	03/06/19 18:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	03/06/19 15:55	03/06/19 18:57	87-68-3	
Methyl-tert-butyl ether	**<0.0074**	mg/kg	0.063	0.0074	1	03/06/19 15:55	03/06/19 18:57	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	03/06/19 15:55	03/06/19 18:57	75-09-2	
Naphthalene	**<0.059**	mg/kg	0.25	0.059	1	03/06/19 15:55	03/06/19 18:57	91-20-3	
Styrene	**<0.0029**	mg/kg	0.063	0.0029	1	03/06/19 15:55	03/06/19 18:57	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.063	0.022	1	03/06/19 15:55	03/06/19 18:57	127-18-4	
Tetrahydrofuran	**<0.091**	mg/kg	2.5	0.091	1	03/06/19 15:55	03/06/19 18:57	109-99-9	
Toluene	**<0.015**	mg/kg	0.063	0.015	1	03/06/19 15:55	03/06/19 18:57	108-88-3	
Trichloroethene	**<0.0096**	mg/kg	0.063	0.0096	1	03/06/19 15:55	03/06/19 18:57	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	03/06/19 15:55	03/06/19 18:57	75-69-4	
Vinyl acetate	**<0.0072**	mg/kg	0.63	0.0072	1	03/06/19 15:55	03/06/19 18:57	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	03/06/19 15:55	03/06/19 18:57	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10465801

Sample: HB-3-3-022819 **Lab ID: 10465801009** Collected: 02/28/19 14:30 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.063	0.010	1	03/06/19 15:55	03/06/19 18:57	156-59-2	
cis-1,3-Dichloropropene	**<0.0090**	mg/kg	0.063	0.0090	1	03/06/19 15:55	03/06/19 18:57	10061-01-5	
m&p-Xylene	**<0.0077**	mg/kg	0.13	0.0077	1	03/06/19 15:55	03/06/19 18:57	179601-23-1	
o-Xylene	**<0.015**	mg/kg	0.063	0.015	1	03/06/19 15:55	03/06/19 18:57	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.063	0.029	1	03/06/19 15:55	03/06/19 18:57	156-60-5	
trans-1,3-Dichloropropene	**<0.0087**	mg/kg	0.063	0.0087	1	03/06/19 15:55	03/06/19 18:57	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1	03/06/19 15:55	03/06/19 18:57	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1	03/06/19 15:55	03/06/19 18:57	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	03/06/19 15:55	03/06/19 18:57	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: Trip Blank **Lab ID: 10465801010** Collected: 02/28/19 00:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.023**	mg/kg	0.050	0.023	1	03/06/19 15:55	03/06/19 18:21	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.0088**	mg/kg	0.050	0.0088	1	03/06/19 15:55	03/06/19 18:21	79-34-5	
1,1,2-Trichloroethane	**<0.0060**	mg/kg	0.050	0.0060	1	03/06/19 15:55	03/06/19 18:21	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.058**	mg/kg	0.20	0.058	1	03/06/19 15:55	03/06/19 18:21	76-13-1	
1,1-Dichloroethane	**<0.0056**	mg/kg	0.050	0.0056	1	03/06/19 15:55	03/06/19 18:21	75-34-3	
1,1-Dichloroethene	**<0.015**	mg/kg	0.20	0.015	1	03/06/19 15:55	03/06/19 18:21	75-35-4	
1,2,4-Trichlorobenzene	**<0.011**	mg/kg	0.050	0.011	1	03/06/19 15:55	03/06/19 18:21	120-82-1	
1,2,4-Trimethylbenzene	**<0.010**	mg/kg	0.050	0.010	1	03/06/19 15:55	03/06/19 18:21	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0053**	mg/kg	0.050	0.0053	1	03/06/19 15:55	03/06/19 18:21	106-93-4	
1,2-Dichlorobenzene	**<0.0020**	mg/kg	0.050	0.0020	1	03/06/19 15:55	03/06/19 18:21	95-50-1	
1,2-Dichloroethane	**<0.0055**	mg/kg	0.050	0.0055	1	03/06/19 15:55	03/06/19 18:21	107-06-2	
1,3,5-Trimethylbenzene	**<0.0080**	mg/kg	0.050	0.0080	1	03/06/19 15:55	03/06/19 18:21	108-67-8	
1,3-Dichlorobenzene	**<0.0018**	mg/kg	0.050	0.0018	1	03/06/19 15:55	03/06/19 18:21	541-73-1	
1,4-Dichlorobenzene	**<0.0031**	mg/kg	0.050	0.0031	1	03/06/19 15:55	03/06/19 18:21	106-46-7	
2-Butanone (MEK)	**<0.027**	mg/kg	0.25	0.027	1	03/06/19 15:55	03/06/19 18:21	78-93-3	
2-Hexanone	**<0.012**	mg/kg	0.25	0.012	1	03/06/19 15:55	03/06/19 18:21	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.010**	mg/kg	0.25	0.010	1	03/06/19 15:55	03/06/19 18:21	108-10-1	
Acetone	**<0.31**	mg/kg	1.0	0.31	1	03/06/19 15:55	03/06/19 18:21	67-64-1	
Benzene	**0.0045J**	mg/kg	0.020	0.0028	1	03/06/19 15:55	03/06/19 18:21	71-43-2	B
Bromodichloromethane	**<0.017**	mg/kg	0.050	0.017	1	03/06/19 15:55	03/06/19 18:21	75-27-4	
Bromoform	**<0.076**	mg/kg	0.20	0.076	1	03/06/19 15:55	03/06/19 18:21	75-25-2	
Bromomethane	**<0.058**	mg/kg	0.50	0.058	1	03/06/19 15:55	03/06/19 18:21	74-83-9	
Carbon tetrachloride	**<0.024**	mg/kg	0.050	0.024	1	03/06/19 15:55	03/06/19 18:21	56-23-5	
Chlorobenzene	**<0.0028**	mg/kg	0.050	0.0028	1	03/06/19 15:55	03/06/19 18:21	108-90-7	
Chloroethane	**<0.026**	mg/kg	0.50	0.026	1	03/06/19 15:55	03/06/19 18:21	75-00-3	
Chloroform	**<0.025**	mg/kg	0.050	0.025	1	03/06/19 15:55	03/06/19 18:21	67-66-3	
Chloromethane	**<0.012**	mg/kg	0.20	0.012	1	03/06/19 15:55	03/06/19 18:21	74-87-3	
Dibromochloromethane	**<0.0058**	mg/kg	0.20	0.0058	1	03/06/19 15:55	03/06/19 18:21	124-48-1	
Dichlorodifluoromethane	**<0.016**	mg/kg	0.20	0.016	1	03/06/19 15:55	03/06/19 18:21	75-71-8	
Ethylbenzene	**<0.0027**	mg/kg	0.050	0.0027	1	03/06/19 15:55	03/06/19 18:21	100-41-4	
Hexachloro-1,3-butadiene	**<0.012**	mg/kg	0.25	0.012	1	03/06/19 15:55	03/06/19 18:21	87-68-3	
Methyl-tert-butyl ether	**<0.0060**	mg/kg	0.050	0.0060	1	03/06/19 15:55	03/06/19 18:21	1634-04-4	
Methylene Chloride	**<0.094**	mg/kg	0.20	0.094	1	03/06/19 15:55	03/06/19 18:21	75-09-2	
Naphthalene	**<0.047**	mg/kg	0.20	0.047	1	03/06/19 15:55	03/06/19 18:21	91-20-3	
Styrene	**<0.0023**	mg/kg	0.050	0.0023	1	03/06/19 15:55	03/06/19 18:21	100-42-5	
Tetrachloroethene	**<0.018**	mg/kg	0.050	0.018	1	03/06/19 15:55	03/06/19 18:21	127-18-4	
Tetrahydrofuran	**<0.073**	mg/kg	2.0	0.073	1	03/06/19 15:55	03/06/19 18:21	109-99-9	
Toluene	**<0.012**	mg/kg	0.050	0.012	1	03/06/19 15:55	03/06/19 18:21	108-88-3	
Trichloroethene	**<0.0077**	mg/kg	0.050	0.0077	1	03/06/19 15:55	03/06/19 18:21	79-01-6	
Trichlorofluoromethane	**<0.087**	mg/kg	0.20	0.087	1	03/06/19 15:55	03/06/19 18:21	75-69-4	
Vinyl acetate	**<0.0058**	mg/kg	0.50	0.0058	1	03/06/19 15:55	03/06/19 18:21	108-05-4	
Vinyl chloride	**<0.0098**	mg/kg	0.020	0.0098	1	03/06/19 15:55	03/06/19 18:21	75-01-4	
cis-1,2-Dichloroethene	**<0.0083**	mg/kg	0.050	0.0083	1	03/06/19 15:55	03/06/19 18:21	156-59-2	
cis-1,3-Dichloropropene	**<0.0072**	mg/kg	0.050	0.0072	1	03/06/19 15:55	03/06/19 18:21	10061-01-5	
m&p-Xylene	**<0.0062**	mg/kg	0.10	0.0062	1	03/06/19 15:55	03/06/19 18:21	179601-23-1	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: Trip Blank **Lab ID: 10465801010** Collected: 02/28/19 00:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
o-Xylene	**<0.012**	mg/kg	0.050	0.012	1	03/06/19 15:55	03/06/19 18:21	95-47-6	
trans-1,2-Dichloroethene	**<0.023**	mg/kg	0.050	0.023	1	03/06/19 15:55	03/06/19 18:21	156-60-5	
trans-1,3-Dichloropropene	**<0.0070**	mg/kg	0.050	0.0070	1	03/06/19 15:55	03/06/19 18:21	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-125		1	03/06/19 15:55	03/06/19 18:21	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	03/06/19 15:55	03/06/19 18:21	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1	03/06/19 15:55	03/06/19 18:21	460-00-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: Dup-01-022819 **Lab ID: 10465801011** Collected: 02/28/19 12:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**17.1**	%	0.10	0.10	1		03/06/19 10:52		
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,1-Trichloroethane	**<0.029**	mg/kg	0.062	0.029	1	03/06/19 15:55	03/06/19 19:15	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.011**	mg/kg	0.062	0.011	1	03/06/19 15:55	03/06/19 19:15	79-34-5	
1,1,2-Trichloroethane	**<0.0074**	mg/kg	0.062	0.0074	1	03/06/19 15:55	03/06/19 19:15	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.072**	mg/kg	0.25	0.072	1	03/06/19 15:55	03/06/19 19:15	76-13-1	
1,1-Dichloroethane	**<0.0070**	mg/kg	0.062	0.0070	1	03/06/19 15:55	03/06/19 19:15	75-34-3	
1,1-Dichloroethene	**<0.019**	mg/kg	0.25	0.019	1	03/06/19 15:55	03/06/19 19:15	75-35-4	
1,2,4-Trichlorobenzene	**<0.014**	mg/kg	0.062	0.014	1	03/06/19 15:55	03/06/19 19:15	120-82-1	
1,2,4-Trimethylbenzene	**<0.012**	mg/kg	0.062	0.012	1	03/06/19 15:55	03/06/19 19:15	95-63-6	
1,2-Dibromoethane (EDB)	**<0.0065**	mg/kg	0.062	0.0065	1	03/06/19 15:55	03/06/19 19:15	106-93-4	
1,2-Dichlorobenzene	**<0.0025**	mg/kg	0.062	0.0025	1	03/06/19 15:55	03/06/19 19:15	95-50-1	
1,2-Dichloroethane	**<0.0068**	mg/kg	0.062	0.0068	1	03/06/19 15:55	03/06/19 19:15	107-06-2	
1,3,5-Trimethylbenzene	**<0.0099**	mg/kg	0.062	0.0099	1	03/06/19 15:55	03/06/19 19:15	108-67-8	
1,3-Dichlorobenzene	**<0.0023**	mg/kg	0.062	0.0023	1	03/06/19 15:55	03/06/19 19:15	541-73-1	
1,4-Dichlorobenzene	**<0.0039**	mg/kg	0.062	0.0039	1	03/06/19 15:55	03/06/19 19:15	106-46-7	
2-Butanone (MEK)	**<0.033**	mg/kg	0.31	0.033	1	03/06/19 15:55	03/06/19 19:15	78-93-3	
2-Hexanone	**<0.014**	mg/kg	0.31	0.014	1	03/06/19 15:55	03/06/19 19:15	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<0.013**	mg/kg	0.31	0.013	1	03/06/19 15:55	03/06/19 19:15	108-10-1	
Acetone	**<0.39**	mg/kg	1.2	0.39	1	03/06/19 15:55	03/06/19 19:15	67-64-1	
Benzene	**<0.0035**	mg/kg	0.025	0.0035	1	03/06/19 15:55	03/06/19 19:15	71-43-2	
Bromodichloromethane	**<0.021**	mg/kg	0.062	0.021	1	03/06/19 15:55	03/06/19 19:15	75-27-4	
Bromoform	**<0.094**	mg/kg	0.25	0.094	1	03/06/19 15:55	03/06/19 19:15	75-25-2	
Bromomethane	**<0.073**	mg/kg	0.62	0.073	1	03/06/19 15:55	03/06/19 19:15	74-83-9	
Carbon tetrachloride	**<0.030**	mg/kg	0.062	0.030	1	03/06/19 15:55	03/06/19 19:15	56-23-5	
Chlorobenzene	**<0.0035**	mg/kg	0.062	0.0035	1	03/06/19 15:55	03/06/19 19:15	108-90-7	
Chloroethane	**<0.032**	mg/kg	0.62	0.032	1	03/06/19 15:55	03/06/19 19:15	75-00-3	
Chloroform	**<0.031**	mg/kg	0.062	0.031	1	03/06/19 15:55	03/06/19 19:15	67-66-3	
Chloromethane	**<0.015**	mg/kg	0.25	0.015	1	03/06/19 15:55	03/06/19 19:15	74-87-3	
Dibromochloromethane	**<0.0072**	mg/kg	0.25	0.0072	1	03/06/19 15:55	03/06/19 19:15	124-48-1	
Dichlorodifluoromethane	**<0.020**	mg/kg	0.25	0.020	1	03/06/19 15:55	03/06/19 19:15	75-71-8	
Ethylbenzene	**<0.0034**	mg/kg	0.062	0.0034	1	03/06/19 15:55	03/06/19 19:15	100-41-4	
Hexachloro-1,3-butadiene	**<0.015**	mg/kg	0.31	0.015	1	03/06/19 15:55	03/06/19 19:15	87-68-3	
Methyl-tert-butyl ether	**<0.0074**	mg/kg	0.062	0.0074	1	03/06/19 15:55	03/06/19 19:15	1634-04-4	
Methylene Chloride	**<0.12**	mg/kg	0.25	0.12	1	03/06/19 15:55	03/06/19 19:15	75-09-2	
Naphthalene	**<0.058**	mg/kg	0.25	0.058	1	03/06/19 15:55	03/06/19 19:15	91-20-3	
Styrene	**<0.0028**	mg/kg	0.062	0.0028	1	03/06/19 15:55	03/06/19 19:15	100-42-5	
Tetrachloroethene	**<0.022**	mg/kg	0.062	0.022	1	03/06/19 15:55	03/06/19 19:15	127-18-4	
Tetrahydrofuran	**<0.090**	mg/kg	2.5	0.090	1	03/06/19 15:55	03/06/19 19:15	109-99-9	
Toluene	**<0.015**	mg/kg	0.062	0.015	1	03/06/19 15:55	03/06/19 19:15	108-88-3	
Trichloroethene	**<0.0096**	mg/kg	0.062	0.0096	1	03/06/19 15:55	03/06/19 19:15	79-01-6	
Trichlorofluoromethane	**<0.11**	mg/kg	0.25	0.11	1	03/06/19 15:55	03/06/19 19:15	75-69-4	
Vinyl acetate	**<0.0072**	mg/kg	0.62	0.0072	1	03/06/19 15:55	03/06/19 19:15	108-05-4	
Vinyl chloride	**<0.012**	mg/kg	0.025	0.012	1	03/06/19 15:55	03/06/19 19:15	75-01-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Sample: Dup-01-022819 **Lab ID: 10465801011** Collected: 02/28/19 12:00 Received: 03/05/19 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
cis-1,2-Dichloroethene	**<0.010**	mg/kg	0.062	0.010	1	03/06/19 15:55	03/06/19 19:15	156-59-2	
cis-1,3-Dichloropropene	**<0.0089**	mg/kg	0.062	0.0089	1	03/06/19 15:55	03/06/19 19:15	10061-01-5	
m&p-Xylene	**<0.0077**	mg/kg	0.12	0.0077	1	03/06/19 15:55	03/06/19 19:15	179601-23-1	
o-Xylene	**<0.014**	mg/kg	0.062	0.014	1	03/06/19 15:55	03/06/19 19:15	95-47-6	
trans-1,2-Dichloroethene	**<0.029**	mg/kg	0.062	0.029	1	03/06/19 15:55	03/06/19 19:15	156-60-5	
trans-1,3-Dichloropropene	**<0.0087**	mg/kg	0.062	0.0087	1	03/06/19 15:55	03/06/19 19:15	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-125		1	03/06/19 15:55	03/06/19 19:15	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	03/06/19 15:55	03/06/19 19:15	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	03/06/19 15:55	03/06/19 19:15	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

QC Batch: 592546 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10465801001, 10465801002, 10465801003, 10465801004, 10465801005, 10465801006, 10465801007, 10465801008, 10465801009, 10465801011

SAMPLE DUPLICATE: 3204167

Parameter	Units	12122003012 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.1	4.0	2	30	

SAMPLE DUPLICATE: 3204313

Parameter	Units	10465801009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.4	17.5	0	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

QC Batch: 592547 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10465801001, 10465801002, 10465801003, 10465801004, 10465801005, 10465801006, 10465801007, 10465801008

METHOD BLANK: 3204179 Matrix: Solid
Associated Lab Samples: 10465801001, 10465801002, 10465801003, 10465801004, 10465801005, 10465801006, 10465801007, 10465801008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	<0.023	0.050	0.023	03/06/19 15:47	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0088	0.20	0.0088	03/06/19 15:47	MN
1,1,2-Trichloroethane	mg/kg	<0.0060	0.050	0.0060	03/06/19 15:47	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.058	0.50	0.058	03/06/19 15:47	MN
1,1-Dichloroethane	mg/kg	<0.0056	0.050	0.0056	03/06/19 15:47	
1,1-Dichloroethene	mg/kg	<0.015	0.050	0.015	03/06/19 15:47	
1,2,4-Trichlorobenzene	mg/kg	<0.011	0.050	0.011	03/06/19 15:47	
1,2,4-Trimethylbenzene	mg/kg	<0.010	0.050	0.010	03/06/19 15:47	
1,2-Dibromoethane (EDB)	mg/kg	<0.0053	0.050	0.0053	03/06/19 15:47	
1,2-Dichlorobenzene	mg/kg	<0.0020	0.050	0.0020	03/06/19 15:47	
1,2-Dichloroethane	mg/kg	<0.0055	0.050	0.0055	03/06/19 15:47	
1,3,5-Trimethylbenzene	mg/kg	<0.0080	0.050	0.0080	03/06/19 15:47	
1,3-Dichlorobenzene	mg/kg	<0.0018	0.050	0.0018	03/06/19 15:47	
1,4-Dichlorobenzene	mg/kg	<0.0031	0.050	0.0031	03/06/19 15:47	
2-Butanone (MEK)	mg/kg	<0.027	0.25	0.027	03/06/19 15:47	
2-Hexanone	mg/kg	<0.012	0.25	0.012	03/06/19 15:47	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.010	0.25	0.010	03/06/19 15:47	
Acetone	mg/kg	<0.31	1.0	0.31	03/06/19 15:47	
Benzene	mg/kg	<0.0028	0.020	0.0028	03/06/19 15:47	
Bromodichloromethane	mg/kg	<0.017	0.050	0.017	03/06/19 15:47	
Bromoform	mg/kg	<0.076	0.20	0.076	03/06/19 15:47	
Bromomethane	mg/kg	<0.058	0.50	0.058	03/06/19 15:47	
Carbon tetrachloride	mg/kg	<0.024	0.20	0.024	03/06/19 15:47	MN
Chlorobenzene	mg/kg	<0.0028	0.050	0.0028	03/06/19 15:47	
Chloroethane	mg/kg	<0.026	0.50	0.026	03/06/19 15:47	
Chloroform	mg/kg	<0.025	0.050	0.025	03/06/19 15:47	
Chloromethane	mg/kg	<0.012	0.20	0.012	03/06/19 15:47	
cis-1,2-Dichloroethene	mg/kg	<0.0083	0.050	0.0083	03/06/19 15:47	
cis-1,3-Dichloropropene	mg/kg	<0.0072	0.050	0.0072	03/06/19 15:47	
Dibromochloromethane	mg/kg	<0.0058	0.20	0.0058	03/06/19 15:47	
Dichlorodifluoromethane	mg/kg	<0.016	0.20	0.016	03/06/19 15:47	
Ethylbenzene	mg/kg	<0.0027	0.050	0.0027	03/06/19 15:47	
Hexachloro-1,3-butadiene	mg/kg	<0.012	0.25	0.012	03/06/19 15:47	
m&p-Xylene	mg/kg	<0.0062	0.10	0.0062	03/06/19 15:47	
Methyl-tert-butyl ether	mg/kg	<0.0060	0.050	0.0060	03/06/19 15:47	
Methylene Chloride	mg/kg	<0.094	0.20	0.094	03/06/19 15:47	
Naphthalene	mg/kg	<0.047	0.20	0.047	03/06/19 15:47	
o-Xylene	mg/kg	<0.012	0.050	0.012	03/06/19 15:47	
Styrene	mg/kg	<0.0023	0.050	0.0023	03/06/19 15:47	
Tetrachloroethene	mg/kg	<0.018	0.050	0.018	03/06/19 15:47	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

METHOD BLANK: 3204179 Matrix: Solid

Associated Lab Samples: 10465801001, 10465801002, 10465801003, 10465801004, 10465801005, 10465801006, 10465801007, 10465801008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Tetrahydrofuran	mg/kg	<0.073	2.0	0.073	03/06/19 15:47	
Toluene	mg/kg	<0.012	0.050	0.012	03/06/19 15:47	
trans-1,2-Dichloroethene	mg/kg	<0.023	0.050	0.023	03/06/19 15:47	
trans-1,3-Dichloropropene	mg/kg	<0.0070	0.050	0.0070	03/06/19 15:47	
Trichloroethene	mg/kg	<0.0077	0.050	0.0077	03/06/19 15:47	
Trichlorofluoromethane	mg/kg	<0.087	0.20	0.087	03/06/19 15:47	
Vinyl acetate	mg/kg	<0.0058	0.50	0.0058	03/06/19 15:47	
Vinyl chloride	mg/kg	<0.0098	0.020	0.0098	03/06/19 15:47	
1,2-Dichloroethane-d4 (S)	%.	101	75-125		03/06/19 15:47	
4-Bromofluorobenzene (S)	%.	98	75-125		03/06/19 15:47	
Toluene-d8 (S)	%.	99	75-125		03/06/19 15:47	

LABORATORY CONTROL SAMPLE: 3204180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	1	0.85	85	53-146	
1,1,2,2-Tetrachloroethane	mg/kg	1	0.75	75	51-125	
1,1,2-Trichloroethane	mg/kg	1	0.82	82	55-125	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	0.84	84	49-150	
1,1-Dichloroethane	mg/kg	1	0.82	82	56-125	
1,1-Dichloroethene	mg/kg	1	0.80	80	48-148	
1,2,4-Trichlorobenzene	mg/kg	1	0.80	80	48-125	
1,2,4-Trimethylbenzene	mg/kg	1	0.79	79	51-126	
1,2-Dibromoethane (EDB)	mg/kg	1	0.82	82	52-125	
1,2-Dichlorobenzene	mg/kg	1	0.79	79	50-125	
1,2-Dichloroethane	mg/kg	1	0.74	74	51-125	
1,3,5-Trimethylbenzene	mg/kg	1	0.84	84	52-127	
1,3-Dichlorobenzene	mg/kg	1	0.80	80	50-128	
1,4-Dichlorobenzene	mg/kg	1	0.81	81	51-125	
2-Butanone (MEK)	mg/kg	5	3.5	70	43-125	
2-Hexanone	mg/kg	5	4.0	79	44-137	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	3.9	77	39-125	
Acetone	mg/kg	5	4.3	86	46-136	
Benzene	mg/kg	1	0.78	78	48-125	
Bromodichloromethane	mg/kg	1	0.79	79	51-131	
Bromoform	mg/kg	1	0.81	81	52-125	
Bromomethane	mg/kg	1	0.75	75	30-150	
Carbon tetrachloride	mg/kg	1	0.80	80	59-129	
Chlorobenzene	mg/kg	1	0.80	80	54-125	
Chloroethane	mg/kg	1	0.84	84	61-132	
Chloroform	mg/kg	1	0.82	82	52-125	
Chloromethane	mg/kg	1	0.64	64	46-125	
cis-1,2-Dichloroethene	mg/kg	1	0.87	87	54-127	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

LABORATORY CONTROL SAMPLE: 3204180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	mg/kg	1	0.83	83	50-134	
Dibromochloromethane	mg/kg	1	0.78	78	54-125	
Dichlorodifluoromethane	mg/kg	1	0.67	67	42-125	
Ethylbenzene	mg/kg	1	0.85	85	51-125	
Hexachloro-1,3-butadiene	mg/kg	1	0.93	93	41-133	
m&p-Xylene	mg/kg	2	1.7	86	51-128	
Methyl-tert-butyl ether	mg/kg	1	0.72	72	53-125	
Methylene Chloride	mg/kg	1	0.72	72	48-125	
Naphthalene	mg/kg	1	0.81	81	51-125	
o-Xylene	mg/kg	1	0.83	83	53-125	
Styrene	mg/kg	1	0.87	87	53-128	
Tetrachloroethene	mg/kg	1	0.96	96	54-131	
Tetrahydrofuran	mg/kg	10	8.9	89	42-145	
Toluene	mg/kg	1	0.82	82	51-125	
trans-1,2-Dichloroethene	mg/kg	1	0.82	82	50-130	
trans-1,3-Dichloropropene	mg/kg	1	0.86	86	52-125	
Trichloroethene	mg/kg	1	0.82	82	55-131	
Trichlorofluoromethane	mg/kg	1	0.89	89	30-150	
Vinyl acetate	mg/kg	1	0.67	67	46-125	
Vinyl chloride	mg/kg	1	0.74	74	58-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-125	
4-Bromofluorobenzene (S)	%.			98	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204181 3204182

Parameter	Units	10464991001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	mg/kg	ND	1.3	1.2	1.3	1.4	104	118	63-150	4	30	
1,1,2,2-Tetrachloroethane	mg/kg	ND	1.3	1.2	1.3	1.4	103	115	60-146	2	30	
1,1,2-Trichloroethane	mg/kg	ND	1.3	1.2	1.3	1.3	104	113	63-143	0	30	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	1.3	1.2	1.2	1.3	97	107	30-150	2	30	
1,1-Dichloroethane	mg/kg	ND	1.3	1.2	1.3	1.3	100	113	63-144	3	30	
1,1-Dichloroethene	mg/kg	ND	1.3	1.2	1.2	1.2	95	101	30-150	2	30	
1,2,4-Trichlorobenzene	mg/kg	ND	1.3	1.2	1.3	1.3	100	115	66-142	5	30	
1,2,4-Trimethylbenzene	mg/kg	ND	1.3	1.2	1.3	1.3	101	114	65-145	4	30	
1,2-Dibromoethane (EDB)	mg/kg	ND	1.3	1.2	1.4	1.4	106	121	67-135	5	30	
1,2-Dichlorobenzene	mg/kg	ND	1.3	1.2	1.3	1.3	100	111	68-141	2	30	
1,2-Dichloroethane	mg/kg	ND	1.3	1.2	1.2	1.2	92	104	56-132	4	30	
1,3,5-Trimethylbenzene	mg/kg	ND	1.3	1.2	1.4	1.4	110	123	66-148	3	30	
1,3-Dichlorobenzene	mg/kg	ND	1.3	1.2	1.3	1.3	103	113	63-148	1	30	
1,4-Dichlorobenzene	mg/kg	ND	1.3	1.2	1.3	1.3	102	114	68-140	3	30	
2-Butanone (MEK)	mg/kg	ND	6.4	5.8	6.4	6.7	100	115	53-138	5	30	
2-Hexanone	mg/kg	ND	6.4	5.8	7.4	7.8	115	133	57-150	6	30	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204181 3204182

Parameter	Units	10464991001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	6.4	5.8	7.1	7.4	111	126	47-150	4	30	
Acetone	mg/kg	ND	6.4	5.8	6.6	6.6	104	113	64-150	0	30	
Benzene	mg/kg	ND	1.3	1.2	1.2	1.3	97	108	63-136	2	30	
Bromodichloromethane	mg/kg	ND	1.3	1.2	1.3	1.3	101	113	63-150	3	30	
Bromoform	mg/kg	ND	1.3	1.2	1.3	1.4	104	115	64-140	2	30	
Bromomethane	mg/kg	ND	1.3	1.2	1.1	0.98	84	84	56-148	8	30	
Carbon tetrachloride	mg/kg	ND	1.3	1.2	1.3	1.3	100	112	75-148	3	30	
Chlorobenzene	mg/kg	ND	1.3	1.2	1.3	1.3	101	112	62-147	1	30	
Chloroethane	mg/kg	ND	1.3	1.2	1.1	1.1	87	95	37-150	1	30	
Chloroform	mg/kg	ND	1.3	1.2	1.3	1.3	101	112	66-130	2	30	
Chloromethane	mg/kg	ND	1.3	1.2	0.86	0.84	67	72	35-131	2	30	
cis-1,2-Dichloroethene	mg/kg	ND	1.3	1.2	1.3	1.4	101	116	63-143	6	30	
cis-1,3-Dichloropropene	mg/kg	ND	1.3	1.2	1.3	1.4	104	120	60-150	6	30	
Dibromochloromethane	mg/kg	ND	1.3	1.2	1.3	1.4	103	116	64-144	4	30	
Dichlorodifluoromethane	mg/kg	ND	1.3	1.2	0.76	0.72	60	61	30-125	6	30	
Ethylbenzene	mg/kg	ND	1.3	1.2	1.4	1.4	107	118	64-142	1	30	
Hexachloro-1,3-butadiene	mg/kg	ND	1.3	1.2	1.2	1.3	95	110	58-150	6	30	
m&p-Xylene	mg/kg	ND	2.5	2.3	2.8	2.8	108	120	67-145	2	30	
Methyl-tert-butyl ether	mg/kg	ND	1.3	1.2	1.2	1.2	92	106	69-134	6	30	
Methylene Chloride	mg/kg	ND	1.3	1.2	1.1	1.1	85	97	56-134	4	30	
Naphthalene	mg/kg	ND	1.3	1.2	1.4	1.5	110	127	63-148	6	30	
o-Xylene	mg/kg	ND	1.3	1.2	1.4	1.4	106	119	63-148	3	30	
Styrene	mg/kg	ND	1.3	1.2	1.4	1.4	109	122	63-150	2	30	
Tetrachloroethene	mg/kg	ND	1.3	1.2	1.5	1.5	117	123	62-150	3	30	
Tetrahydrofuran	mg/kg	ND	12.8	11.8	14.1	14.7	111	125	53-150	4	30	
Toluene	mg/kg	ND	1.3	1.2	1.3	1.3	103	114	61-141	2	30	
trans-1,2-Dichloroethene	mg/kg	ND	1.3	1.2	1.2	1.3	92	107	52-148	7	30	
trans-1,3-Dichloropropene	mg/kg	ND	1.3	1.2	1.4	1.4	106	118	62-142	3	30	
Trichloroethene	mg/kg	ND	1.3	1.2	1.3	1.3	99	110	59-150	2	30	
Trichlorofluoromethane	mg/kg	ND	1.3	1.2	1.2	1.1	94	96	30-150	6	30	
Vinyl acetate	mg/kg	ND	1.3	1.2	1.2	1.2	90	104	30-150	5	30	
Vinyl chloride	mg/kg	ND	1.3	1.2	1.0	0.94	78	80	44-144	6	30	
1,2-Dichloroethane-d4 (S)	%.						96	96	75-125			
4-Bromofluorobenzene (S)	%.						99	99	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

QC Batch: 592684 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10465801009, 10465801010, 10465801011

METHOD BLANK: 3204755 Matrix: Solid
Associated Lab Samples: 10465801009, 10465801010, 10465801011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	<0.023	0.050	0.023	03/06/19 18:03	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0088	0.050	0.0088	03/06/19 18:03	
1,1,2-Trichloroethane	mg/kg	<0.0060	0.050	0.0060	03/06/19 18:03	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.058	0.20	0.058	03/06/19 18:03	
1,1-Dichloroethane	mg/kg	<0.0056	0.050	0.0056	03/06/19 18:03	
1,1-Dichloroethene	mg/kg	<0.015	0.20	0.015	03/06/19 18:03	MN
1,2,4-Trichlorobenzene	mg/kg	<0.011	0.050	0.011	03/06/19 18:03	
1,2,4-Trimethylbenzene	mg/kg	<0.010	0.050	0.010	03/06/19 18:03	
1,2-Dibromoethane (EDB)	mg/kg	<0.0053	0.050	0.0053	03/06/19 18:03	
1,2-Dichlorobenzene	mg/kg	<0.0020	0.050	0.0020	03/06/19 18:03	
1,2-Dichloroethane	mg/kg	<0.0055	0.050	0.0055	03/06/19 18:03	
1,3,5-Trimethylbenzene	mg/kg	<0.0080	0.050	0.0080	03/06/19 18:03	
1,3-Dichlorobenzene	mg/kg	<0.0018	0.050	0.0018	03/06/19 18:03	
1,4-Dichlorobenzene	mg/kg	<0.0031	0.050	0.0031	03/06/19 18:03	
2-Butanone (MEK)	mg/kg	<0.027	0.25	0.027	03/06/19 18:03	
2-Hexanone	mg/kg	<0.012	0.25	0.012	03/06/19 18:03	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.010	0.25	0.010	03/06/19 18:03	
Acetone	mg/kg	<0.31	1.0	0.31	03/06/19 18:03	
Benzene	mg/kg	0.0054J	0.020	0.0028	03/06/19 18:03	
Bromodichloromethane	mg/kg	<0.017	0.050	0.017	03/06/19 18:03	
Bromoform	mg/kg	<0.076	0.20	0.076	03/06/19 18:03	
Bromomethane	mg/kg	<0.058	0.50	0.058	03/06/19 18:03	
Carbon tetrachloride	mg/kg	<0.024	0.050	0.024	03/06/19 18:03	
Chlorobenzene	mg/kg	<0.0028	0.050	0.0028	03/06/19 18:03	
Chloroethane	mg/kg	<0.026	0.50	0.026	03/06/19 18:03	
Chloroform	mg/kg	<0.025	0.050	0.025	03/06/19 18:03	
Chloromethane	mg/kg	<0.012	0.20	0.012	03/06/19 18:03	
cis-1,2-Dichloroethene	mg/kg	<0.0083	0.050	0.0083	03/06/19 18:03	
cis-1,3-Dichloropropene	mg/kg	<0.0072	0.050	0.0072	03/06/19 18:03	
Dibromochloromethane	mg/kg	<0.0058	0.20	0.0058	03/06/19 18:03	
Dichlorodifluoromethane	mg/kg	<0.016	0.20	0.016	03/06/19 18:03	
Ethylbenzene	mg/kg	<0.0027	0.050	0.0027	03/06/19 18:03	
Hexachloro-1,3-butadiene	mg/kg	<0.012	0.25	0.012	03/06/19 18:03	
m&p-Xylene	mg/kg	<0.0062	0.10	0.0062	03/06/19 18:03	
Methyl-tert-butyl ether	mg/kg	<0.0060	0.050	0.0060	03/06/19 18:03	
Methylene Chloride	mg/kg	<0.094	0.20	0.094	03/06/19 18:03	
Naphthalene	mg/kg	<0.047	0.20	0.047	03/06/19 18:03	
o-Xylene	mg/kg	<0.012	0.050	0.012	03/06/19 18:03	
Styrene	mg/kg	<0.0023	0.050	0.0023	03/06/19 18:03	
Tetrachloroethene	mg/kg	<0.018	0.050	0.018	03/06/19 18:03	
Tetrahydrofuran	mg/kg	<0.073	2.0	0.073	03/06/19 18:03	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

METHOD BLANK: 3204755 Matrix: Solid

Associated Lab Samples: 10465801009, 10465801010, 10465801011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Toluene	mg/kg	<0.012	0.050	0.012	03/06/19 18:03	
trans-1,2-Dichloroethene	mg/kg	<0.023	0.050	0.023	03/06/19 18:03	
trans-1,3-Dichloropropene	mg/kg	<0.0070	0.050	0.0070	03/06/19 18:03	
Trichloroethene	mg/kg	<0.0077	0.050	0.0077	03/06/19 18:03	
Trichlorofluoromethane	mg/kg	<0.087	0.20	0.087	03/06/19 18:03	
Vinyl acetate	mg/kg	<0.0058	0.50	0.0058	03/06/19 18:03	
Vinyl chloride	mg/kg	<0.0098	0.020	0.0098	03/06/19 18:03	
1,2-Dichloroethane-d4 (S)	%.	111	75-125		03/06/19 18:03	
4-Bromofluorobenzene (S)	%.	97	75-125		03/06/19 18:03	
Toluene-d8 (S)	%.	101	75-125		03/06/19 18:03	

LABORATORY CONTROL SAMPLE: 3204756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	1	1.0	103	53-146	
1,1,2,2-Tetrachloroethane	mg/kg	1	0.87	87	51-125	
1,1,2-Trichloroethane	mg/kg	1	0.90	90	55-125	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	1.1	111	49-150	
1,1-Dichloroethane	mg/kg	1	0.93	93	56-125	
1,1-Dichloroethene	mg/kg	1	1.0	104	48-148	
1,2,4-Trichlorobenzene	mg/kg	1	0.83	83	48-125	
1,2,4-Trimethylbenzene	mg/kg	1	0.92	92	51-126	
1,2-Dibromoethane (EDB)	mg/kg	1	0.87	87	52-125	
1,2-Dichlorobenzene	mg/kg	1	0.88	88	50-125	
1,2-Dichloroethane	mg/kg	1	0.86	86	51-125	
1,3,5-Trimethylbenzene	mg/kg	1	0.96	96	52-127	
1,3-Dichlorobenzene	mg/kg	1	0.90	90	50-128	
1,4-Dichlorobenzene	mg/kg	1	0.89	89	51-125	
2-Butanone (MEK)	mg/kg	5	4.0	80	43-125	
2-Hexanone	mg/kg	5	4.4	88	44-137	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	4.3	87	39-125	
Acetone	mg/kg	5	4.1	82	46-136	
Benzene	mg/kg	1	0.91	91	48-125	
Bromodichloromethane	mg/kg	1	0.92	92	51-131	
Bromoform	mg/kg	1	0.84	84	52-125	
Bromomethane	mg/kg	1	1.2	117	30-150	
Carbon tetrachloride	mg/kg	1	1.2	120	59-129	
Chlorobenzene	mg/kg	1	0.88	88	54-125	
Chloroethane	mg/kg	1	1.1	112	61-132	
Chloroform	mg/kg	1	1.1	105	52-125	
Chloromethane	mg/kg	1	1.0	105	46-125	
cis-1,2-Dichloroethene	mg/kg	1	0.92	92	54-127	
cis-1,3-Dichloropropene	mg/kg	1	0.91	91	50-134	
Dibromochloromethane	mg/kg	1	0.88	88	54-125	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

LABORATORY CONTROL SAMPLE: 3204756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dichlorodifluoromethane	mg/kg	1	0.96	96	42-125	
Ethylbenzene	mg/kg	1	0.90	90	51-125	
Hexachloro-1,3-butadiene	mg/kg	1	0.87	87	41-133	
m&p-Xylene	mg/kg	2	1.8	92	51-128	
Methyl-tert-butyl ether	mg/kg	1	0.88	88	53-125	
Methylene Chloride	mg/kg	1	0.87	87	48-125	
Naphthalene	mg/kg	1	0.88	88	51-125	
o-Xylene	mg/kg	1	0.86	86	53-125	
Styrene	mg/kg	1	0.95	95	53-128	
Tetrachloroethene	mg/kg	1	0.93	93	54-131	
Tetrahydrofuran	mg/kg	10	9.2	92	42-145	
Toluene	mg/kg	1	0.89	89	51-125	
trans-1,2-Dichloroethene	mg/kg	1	0.98	98	50-130	
trans-1,3-Dichloropropene	mg/kg	1	0.90	90	52-125	
Trichloroethene	mg/kg	1	0.95	95	55-131	
Trichlorofluoromethane	mg/kg	1	1.2	121	30-150	
Vinyl acetate	mg/kg	1	0.92	92	46-125	
Vinyl chloride	mg/kg	1	1.1	108	58-125	
1,2-Dichloroethane-d4 (S)	%.			104	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204785 3204786

Parameter	Units	10465969001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	mg/kg	<0.023	0.96	0.96	1.3	1.3	136	131	63-150	4	30	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0088	0.96	0.96	0.84	0.86	88	90	60-146	2	30	
1,1,2-Trichloroethane	mg/kg	<0.0060	0.96	0.96	1.2	1.2	124	122	63-143	2	30	
1,1,2-Trichlorotrifluoroethane	mg/kg	<0.058	0.96	0.96	1.3	1.3	135	137	30-150	1	30	
1,1-Dichloroethane	mg/kg	<0.0056	0.96	0.96	1.2	1.2	125	123	63-144	2	30	
1,1-Dichloroethene	mg/kg	<0.015	0.96	0.96	1.2	1.2	126	124	30-150	1	30	
1,2,4-Trichlorobenzene	mg/kg	<0.011	0.96	0.96	1.1	1.1	111	117	66-142	5	30	
1,2,4-Trimethylbenzene	mg/kg	<0.010	0.96	0.96	1.2	1.2	123	129	65-145	5	30	
1,2-Dibromoethane (EDB)	mg/kg	<0.0053	0.96	0.96	1.1	1.1	118	116	67-135	2	30	
1,2-Dichlorobenzene	mg/kg	<0.0020	0.96	0.96	1.1	1.1	114	112	68-141	1	30	
1,2-Dichloroethane	mg/kg	0.011J	0.96	0.96	1.1	1.1	112	113	56-132	1	30	
1,3,5-Trimethylbenzene	mg/kg	<0.0080	0.96	0.96	1.2	1.3	127	131	66-148	3	30	
1,3-Dichlorobenzene	mg/kg	<0.0018	0.96	0.96	1.1	1.1	119	116	63-148	2	30	
1,4-Dichlorobenzene	mg/kg	<0.0031	0.96	0.96	1.1	1.1	117	118	68-140	1	30	
2-Butanone (MEK)	mg/kg	<0.027	4.8	4.8	5.6	5.4	117	113	53-138	3	30	
2-Hexanone	mg/kg	<0.011	4.8	4.8	6.1	5.9	128	123	57-150	4	30	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.010	4.8	4.8	5.9	5.9	124	123	47-150	1	30	
Acetone	mg/kg	<0.31	4.8	4.8	5.6	5.3	116	111	64-150	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204785 3204786

Parameter	Units	10465969001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	mg/kg	0.0062J	0.96	0.96	1.2	1.2	122	121	63-136	1	30	
Bromodichloromethane	mg/kg	<0.017	0.96	0.96	1.1	1.2	120	122	63-150	2	30	
Bromoform	mg/kg	<0.076	0.96	0.96	1.1	1.1	119	119	64-140	0	30	
Bromomethane	mg/kg	<0.058	0.96	0.96	1.3	1.2	131	128	56-148	2	30	
Carbon tetrachloride	mg/kg	<0.024	0.96	0.96	1.5	1.5	161	158	75-148	2	30	M1
Chlorobenzene	mg/kg	<0.0028	0.96	0.96	1.1	1.1	119	118	62-147	1	30	
Chloroethane	mg/kg	<0.026	0.96	0.96	1.2	1.2	123	124	37-150	0	30	
Chloroform	mg/kg	<0.025	0.96	0.96	1.3	1.3	135	134	66-130	1	30	M1
Chloromethane	mg/kg	<0.012	0.96	0.96	1.1	1.0	111	110	35-131	1	30	
cis-1,2-Dichloroethene	mg/kg	<0.0083	0.96	0.96	1.2	1.2	124	125	63-143	1	30	
cis-1,3-Dichloropropene	mg/kg	<0.0071	0.96	0.96	1.2	1.2	121	123	60-150	1	30	
Dibromochloromethane	mg/kg	<0.0058	0.96	0.96	1.2	1.2	121	121	64-144	0	30	
Dichlorodifluoromethane	mg/kg	<0.016	0.96	0.96	0.77	0.80	81	84	30-125	4	30	
Ethylbenzene	mg/kg	0.0040J	0.96	0.96	1.2	1.2	125	122	64-142	2	30	
Hexachloro-1,3-butadiene	mg/kg	<0.012	0.96	0.96	1.1	1.2	118	124	58-150	5	30	
m&p-Xylene	mg/kg	0.013J	1.9	1.9	2.4	2.5	127	128	67-145	1	30	
Methyl-tert-butyl ether	mg/kg	<0.0059	0.96	0.96	1.1	1.2	120	122	69-134	2	30	
Methylene Chloride	mg/kg	<0.094	0.96	0.96	1.2	1.2	121	121	56-134	0	30	
Naphthalene	mg/kg	<0.047	0.96	0.96	1.2	1.1	122	119	63-148	2	30	
o-Xylene	mg/kg	<0.012	0.96	0.96	1.1	1.1	118	118	63-148	0	30	
Styrene	mg/kg	<0.0023	0.96	0.96	1.3	1.3	133	131	63-150	2	30	
Tetrachloroethene	mg/kg	<0.018	0.96	0.96	1.2	1.2	123	125	62-150	1	30	
Tetrahydrofuran	mg/kg	<0.073	9.6	9.6	11.4	11.4	120	119	53-150	0	30	
Toluene	mg/kg	<0.012	0.96	0.96	1.1	1.1	118	118	61-141	0	30	
trans-1,2-Dichloroethene	mg/kg	<0.023	0.96	0.96	1.2	1.2	124	124	52-148	0	30	
trans-1,3-Dichloropropene	mg/kg	<0.0069	0.96	0.96	1.2	1.2	121	121	62-142	0	30	
Trichloroethene	mg/kg	<0.0077	0.96	0.96	1.4	1.4	149	150	59-150	0	30	
Trichlorofluoromethane	mg/kg	<0.087	0.96	0.96	1.3	1.3	132	137	30-150	4	30	
Vinyl acetate	mg/kg	<0.0058	0.96	0.96	0.22J	0.23J	23	24	30-150		30	M1
Vinyl chloride	mg/kg	<0.0098	0.96	0.96	1.1	1.1	118	118	44-144	0	30	
1,2-Dichloroethane-d4 (S)	%.						102	103	75-125			
4-Bromofluorobenzene (S)	%.						98	98	75-125			
Toluene-d8 (S)	%.						100	102	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project:	Freeman WA-Grain Handling Faci
Pace Project No.:	10465801

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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METHOD CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV 5030 Med Level	Solid	SW-846 8260B	SW-846 5030B

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10465801

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10465801001	**HB-1-1-022619**	ASTM D2974	592546		
10465801002	**HB-1-2-022619**	ASTM D2974	592546		
10465801003	**HB-1-3-022619**	ASTM D2974	592546		
10465801004	**HB-2-1-022719**	ASTM D2974	592546		
10465801005	**HB-2-2-022719**	ASTM D2974	592546		
10465801006	**HB-2-3-022719**	ASTM D2974	592546		
10465801007	**HB-3-1-022819**	ASTM D2974	592546		
10465801008	**HB-3-2-022819**	ASTM D2974	592546		
10465801009	**HB-3-3-022819**	ASTM D2974	592546		
10465801011	**Dup-01-022819**	ASTM D2974	592546		
10465801001	**HB-1-1-022619**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801002	**HB-1-2-022619**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801003	**HB-1-3-022619**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801004	**HB-2-1-022719**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801005	**HB-2-2-022719**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801006	**HB-2-3-022719**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801007	**HB-3-1-022819**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801008	**HB-3-2-022819**	EPA 5035/5030B	592547	EPA 8260B	592652
10465801009	**HB-3-3-022819**	EPA 5035/5030B	592684	EPA 8260B	592697
10465801010	**Trip Blank**	EPA 5035/5030B	592684	EPA 8260B	592697
10465801011	**Dup-01-022819**	EPA 5035/5030B	592684	EPA 8260B	592697

REPORT OF LABORATORY ANALYSIS

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A – Required Client Information:

Company:	CH2M Hill
Address:	999 W. Riverside Ave, Suite 500, Spokane, WA 99201
Email:	
Phone:	Fax:
Requested Due Date:	*10 Day Standard*

Section B – Required Project Information:

Report To:	Mark Ochsner, Brad Ostapkowicz
Copy To:	Steve Demus, Lindsey Baumann
Copy To:	David Hodson, UPRR-Sysdat@ghd.com
Purchase Order #	PEDD# 1497
Project Name:	Freeman WA-Grain Handling Facility
Project #:	1497

Section C – Invoice Information:

Attention:	Anne Walsh
Company:	UPRR
Address:	1400 W. 52nd Ave, Denver, CO 80221
Pace Quote:	Contract# 758938
Pace Project Manager:	Jennifer Gross
Pace Profile #:	*36447 / 4*

Regulatory Agency:

State / Location: WA / Freeman

WO# : 10465801

10465801

Requested Analysis Filtered (Y/N)

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other Methanol	Analyses Test Y/N	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals* (Y)	~~2320 Alkalinity~~ Dry Weight	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Eth	COD 410.4	Nitrate+Nitrite 353	4500 Total Phosph	6010 Total Iron	MS/MSD Requested	
1	HB-1-1-022619	SL	G	2/26/19	1030		4	2					2		↓		↓											001
2	HB-1-2-022619	↓	↓	2/26/19	1215		↓	↓					↓		↓		↓											002
3	HB-1-3-022619	↓	↓	2/26/19	1430		↓	↓					↓		↓		↓											003
4	HB-2-1-022719	↓	↓	2/27/19	1200		↓	↓					↓		↓		↓											004
5	HB-2-2-022719	↓	↓	2/27/19	1300		↓	↓					↓		↓		↓											005
6	HB-2-3-022719	↓	↓	2/27/19	1415		↓	↓					↓		↓		↓											006
7	HB-3-1-022819	↓	↓	2/28/19	1100		↓	↓					↓		↓		↓											007
8	HB-3-2-022819	↓	↓	2/28/19	1215		↓	↓					↓		↓		↓											008
9	HB-3-3-022819	↓	↓	2/28/19	1430		↓	↓					↓		↓		↓											009
10	DUP-01-022819	↓	↓	2/28/19	1200		↓	↓					↓		↓		↓											010
11	Trip Blank														↓													011
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in **bold**	[signature] / Jacobs	3/4/19	16:00	[signature] / Pace	3/5/19	845	0.3	Y	N	Y
*Field filtered by client										
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE 3-4-19

PRINT Name of SAMPLER: [signature]

SIGNATURE of SAMPLER:

DATE Signed:

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form - ESI**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-210-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: CH2M Hill

Project #:

WO#: 10465801
PM: JMG **Due Date: 03/19/19**
CLIENT: UPRR_CH2M

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:

Tracking Number: 74759 6381683

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other: **Temp Blank?** ☒Yes ☐No

Thermometer Used: ☐G87A9170600254 ☒G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 0.2 **Cooler Temp Corrected (°C):** 0.3 **Biological Tissue Frozen?** ☐Yes ☐No ☒NA

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** TL 3/5/19

USDA Regulated Soil (☐N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☒No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume (triple volume provided for MS/MSD)?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container.
Is sufficient information available to reconcile the samples to the COC? Matrix: Soil	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, NaOH>9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin./PFAS Per method, VOA pH is checked after analysis	☐Yes	☐No	☒N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
3 Trip Blanks Present?	☐Yes	☒No	☐N/A	15. Recieve 2 Trip Blank
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 090318-3				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: 1320	Temp:	Corrected Temp: 0.3
Time: 1340	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review: Jenni Gross **Date:** 03/05/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 26, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR

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CERTIFICATIONS

Project:	Freeman WA-Grain Handling Faci
Pace Project No.:	10466793

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylviania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10466793001	**MW11S-GW-031319**	Water	03/13/19 10:30	03/14/19 11:50
10466793002	**MW9S-GW-031319**	Water	03/13/19 11:00	03/14/19 11:50
10466793003	**MW25S-GW-031319**	Water	03/13/19 11:30	03/14/19 11:50
10466793004	**MW24S-GW-031319**	Water	03/13/19 12:00	03/14/19 11:50
10466793005	**MW8S-GW-031319**	Water	03/13/19 12:30	03/14/19 11:50
10466793006	**MW7S-GW-031319**	Water	03/13/19 13:00	03/14/19 11:50
10466793007	**MW1S-GW-031319**	Water	03/13/19 13:30	03/14/19 11:50
10466793008	**MW10S-GW-031319**	Water	03/13/19 14:00	03/14/19 11:50
10466793009	**MW6S-GW-031319**	Water	03/13/19 14:30	03/14/19 11:50
10466793010	**MW12S-GW-031319**	Water	03/13/19 15:00	03/14/19 11:50
10466793011	**TB-031319**	Water	03/13/19 08:00	03/14/19 11:50

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SAMPLE ANALYTE COUNT

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10466793001	**MW11S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793002	**MW9S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793003	**MW25S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793004	**MW24S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

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SAMPLE ANALYTE COUNT

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793005	**MW8S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793006	**MW7S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793007	**MW1S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

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SAMPLE ANALYTE COUNT

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793008	**MW10S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793009	**MW6S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793010	**MW12S-GW-031319**	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466793011	**TB-031319**	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466793001	**MW11S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	43.5J	ug/L	200	03/21/19 11:21	
EPA 6010D	Barium, Dissolved	43.9	ug/L	10.0	03/21/19 11:21	
EPA 6010D	Beryllium, Dissolved	0.18J	ug/L	5.0	03/21/19 11:21	
EPA 6010D	Calcium, Dissolved	46100	ug/L	500	03/21/19 11:21	
EPA 6010D	Cobalt, Dissolved	0.72J	ug/L	10.0	03/21/19 11:21	
EPA 6010D	Iron, Dissolved	66.2	ug/L	50.0	03/21/19 11:21	
EPA 6010D	Magnesium, Dissolved	12600	ug/L	500	03/21/19 11:21	
EPA 6010D	Manganese, Dissolved	8.0	ug/L	5.0	03/21/19 11:21	
EPA 6010D	Potassium, Dissolved	620J	ug/L	2500	03/21/19 11:21	
EPA 6010D	Sodium, Dissolved	18500	ug/L	1000	03/21/19 11:21	
EPA 6010D	Thallium, Dissolved	7.1J	ug/L	20.0	03/21/19 11:21	B
EPA 6010D	Vanadium, Dissolved	6.5J	ug/L	15.0	03/21/19 11:21	
EPA 6010D	Zinc, Dissolved	10.3J	ug/L	20.0	03/21/19 11:21	
SM 2320B	Alkalinity, Total as CaCO3	213	mg/L	5.0	03/26/19 12:19	
SM 2540C	Total Dissolved Solids	238	mg/L	20.0	03/19/19 16:55	
SM 4500-S-2 D	Sulfide, Total	0.011J	mg/L	0.020	03/19/19 10:25	M1
EPA 300.0	Chloride	1.6	mg/L	1.2	03/14/19 16:14	M1
EPA 300.0	Sulfate	4.2	mg/L	1.2	03/14/19 16:14	M1
EPA 353.2	Nitrogen, NO2 plus NO3	0.028J	mg/L	0.10	03/16/19 11:50	
SM 5310C	Total Organic Carbon	2.8	mg/L	2.0	03/19/19 09:07	B
10466793002	**MW9S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	92.5J	ug/L	200	03/21/19 11:36	
EPA 6010D	Barium, Dissolved	113	ug/L	10.0	03/21/19 11:36	
EPA 6010D	Cadmium, Dissolved	0.55J	ug/L	3.0	03/21/19 11:36	
EPA 6010D	Calcium, Dissolved	95600	ug/L	500	03/21/19 11:36	
EPA 6010D	Chromium, Dissolved	0.61J	ug/L	10.0	03/21/19 11:36	
EPA 6010D	Cobalt, Dissolved	2.7J	ug/L	10.0	03/21/19 11:36	
EPA 6010D	Copper, Dissolved	1.9J	ug/L	10.0	03/21/19 11:36	
EPA 6010D	Iron, Dissolved	790	ug/L	50.0	03/21/19 11:36	
EPA 6010D	Lead, Dissolved	2.2J	ug/L	10.0	03/21/19 11:36	
EPA 6010D	Magnesium, Dissolved	27300	ug/L	500	03/21/19 11:36	
EPA 6010D	Manganese, Dissolved	70.0	ug/L	5.0	03/21/19 11:36	
EPA 6010D	Nickel, Dissolved	2.9J	ug/L	20.0	03/21/19 11:36	
EPA 6010D	Potassium, Dissolved	2770	ug/L	2500	03/21/19 11:36	
EPA 6010D	Sodium, Dissolved	104000	ug/L	1000	03/21/19 11:36	
EPA 6010D	Thallium, Dissolved	6.2J	ug/L	20.0	03/21/19 11:36	B
EPA 6010D	Vanadium, Dissolved	2.1J	ug/L	15.0	03/21/19 11:36	
EPA 6010D	Zinc, Dissolved	8.0J	ug/L	20.0	03/21/19 11:36	
EPA 8260B	Carbon tetrachloride	326	ug/L	1.0	03/18/19 17:03	
EPA 8260B	Chloroform	51.4	ug/L	4.0	03/15/19 12:21	
SM 2320B	Alkalinity, Total as CaCO3	84.4	mg/L	5.0	03/26/19 12:51	
SM 2540C	Total Dissolved Solids	892	mg/L	20.0	03/19/19 16:55	
EPA 300.0	Chloride	328	mg/L	12.0	03/15/19 06:22	M6
EPA 300.0	Sulfate	59.5	mg/L	6.0	03/15/19 00:20	
EPA 300.0	Nitrate as N	11.2	mg/L	0.50	03/15/19 00:20	M1
EPA 353.2	Nitrogen, NO2 plus NO3	12.4	mg/L	1.0	03/16/19 12:29	FS
EPA 410.4	Chemical Oxygen Demand	22.7J	mg/L	50.0	03/20/19 14:24	

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466793002	**MW9S-GW-031319**					
SM 5310C	Total Organic Carbon	2.2	mg/L	1.0	03/18/19 17:21	
10466793003	**MW25S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	113J	ug/L	200	03/21/19 11:37	
EPA 6010D	Barium, Dissolved	136	ug/L	10.0	03/21/19 11:37	
EPA 6010D	Beryllium, Dissolved	0.17J	ug/L	5.0	03/21/19 11:37	
EPA 6010D	Calcium, Dissolved	74600	ug/L	500	03/21/19 11:37	
EPA 6010D	Chromium, Dissolved	2.6J	ug/L	10.0	03/21/19 11:37	
EPA 6010D	Cobalt, Dissolved	3.4J	ug/L	10.0	03/21/19 11:37	
EPA 6010D	Copper, Dissolved	5.0J	ug/L	10.0	03/21/19 11:37	
EPA 6010D	Iron, Dissolved	331	ug/L	50.0	03/21/19 11:37	
EPA 6010D	Lead, Dissolved	2.8J	ug/L	10.0	03/21/19 11:37	
EPA 6010D	Magnesium, Dissolved	70100	ug/L	500	03/21/19 11:37	
EPA 6010D	Manganese, Dissolved	167	ug/L	5.0	03/21/19 11:37	
EPA 6010D	Potassium, Dissolved	11200	ug/L	2500	03/21/19 11:37	
EPA 6010D	Sodium, Dissolved	679000	ug/L	10000	03/21/19 11:56	
EPA 6010D	Thallium, Dissolved	5.9J	ug/L	20.0	03/21/19 11:37	B
EPA 6010D	Vanadium, Dissolved	2.8J	ug/L	15.0	03/21/19 11:37	
EPA 6010D	Zinc, Dissolved	3.7J	ug/L	20.0	03/21/19 11:37	
EPA 8260B	Acetone	11.5J	ug/L	20.0	03/15/19 12:45	
EPA 8260B	Carbon tetrachloride	34.0	ug/L	0.50	03/15/19 12:45	
EPA 8260B	Chloroform	8.9	ug/L	4.0	03/15/19 12:45	
SM 2320B	Alkalinity, Total as CaCO3	83.3	mg/L	5.0	03/26/19 12:54	
SM 2540C	Total Dissolved Solids	2060	mg/L	100	03/20/19 13:45	D6
EPA 300.0	Chloride	1280	mg/L	24.0	03/15/19 11:33	
EPA 300.0	Nitrate as N	1.4	mg/L	0.10	03/14/19 18:23	
EPA 300.0	Sulfate	60.5	mg/L	1.2	03/14/19 18:23	
EPA 353.2	Nitrogen, NO2 plus NO3	1.4	mg/L	0.10	03/16/19 11:54	FS
EPA 410.4	Chemical Oxygen Demand	104	mg/L	50.0	03/20/19 14:27	
SM 5310C	Total Organic Carbon	12.8	mg/L	1.0	03/18/19 17:35	
10466793004	**MW24S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	64.4J	ug/L	200	03/21/19 11:39	
EPA 6010D	Barium, Dissolved	116	ug/L	10.0	03/21/19 11:39	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	03/21/19 11:39	
EPA 6010D	Calcium, Dissolved	64600	ug/L	500	03/21/19 11:39	
EPA 6010D	Cobalt, Dissolved	5.9J	ug/L	10.0	03/21/19 11:39	
EPA 6010D	Copper, Dissolved	4.0J	ug/L	10.0	03/21/19 11:39	
EPA 6010D	Iron, Dissolved	295	ug/L	50.0	03/21/19 11:39	
EPA 6010D	Magnesium, Dissolved	45900	ug/L	500	03/21/19 11:39	
EPA 6010D	Manganese, Dissolved	392	ug/L	5.0	03/21/19 11:39	
EPA 6010D	Potassium, Dissolved	4090	ug/L	2500	03/21/19 11:39	
EPA 6010D	Sodium, Dissolved	125000	ug/L	1000	03/21/19 11:39	
EPA 6010D	Thallium, Dissolved	5.1J	ug/L	20.0	03/21/19 11:39	B
EPA 6010D	Vanadium, Dissolved	1.8J	ug/L	15.0	03/21/19 11:39	
EPA 6010D	Zinc, Dissolved	7.3J	ug/L	20.0	03/21/19 11:39	
EPA 8260B	Carbon tetrachloride	66.5	ug/L	0.50	03/15/19 13:08	
EPA 8260B	Chloroform	41.7	ug/L	4.0	03/15/19 13:08	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466793004	**MW24S-GW-031319**					
SM 2320B	Alkalinity, Total as CaCO3	118	mg/L	5.0	03/26/19 12:58	
SM 2540C	Total Dissolved Solids	844	mg/L	40.0	03/20/19 13:45	D6
EPA 300.0	Chloride	327	mg/L	6.0	03/14/19 23:44	
EPA 300.0	Nitrate as N	3.7	mg/L	0.10	03/14/19 19:24	
EPA 300.0	Sulfate	50.9	mg/L	1.2	03/14/19 19:24	
EPA 353.2	Nitrogen, NO2 plus NO3	3.7	mg/L	0.50	03/16/19 12:30	FS
EPA 410.4	Chemical Oxygen Demand	77.8	mg/L	50.0	03/20/19 14:27	
SM 5310C	Total Organic Carbon	11.7	mg/L	1.0	03/18/19 17:48	
10466793005	**MW8S-GW-031319**					
EPA 6010D	Barium, Dissolved	31.9	ug/L	10.0	03/21/19 11:41	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	03/21/19 11:41	
EPA 6010D	Calcium, Dissolved	44300	ug/L	500	03/21/19 11:41	
EPA 6010D	Iron, Dissolved	17.0J	ug/L	50.0	03/21/19 11:41	B
EPA 6010D	Lead, Dissolved	2.7J	ug/L	10.0	03/21/19 11:41	
EPA 6010D	Magnesium, Dissolved	10300	ug/L	500	03/21/19 11:41	
EPA 6010D	Manganese, Dissolved	9.6	ug/L	5.0	03/21/19 11:41	
EPA 6010D	Sodium, Dissolved	11200	ug/L	1000	03/21/19 11:41	
EPA 6010D	Thallium, Dissolved	7.8J	ug/L	20.0	03/21/19 11:41	B
EPA 6010D	Vanadium, Dissolved	1.5J	ug/L	15.0	03/21/19 11:41	
EPA 6010D	Zinc, Dissolved	8.6J	ug/L	20.0	03/21/19 11:41	
EPA 8260B	Carbon tetrachloride	214	ug/L	0.50	03/15/19 13:32	
EPA 8260B	Chloroform	51.4	ug/L	4.0	03/15/19 13:32	
SM 2320B	Alkalinity, Total as CaCO3	133	mg/L	5.0	03/26/19 13:01	
SM 2540C	Total Dissolved Solids	281	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	3.0	mg/L	1.2	03/14/19 19:39	
EPA 300.0	Nitrate as N	8.3	mg/L	0.20	03/15/19 00:02	
EPA 300.0	Sulfate	19.6	mg/L	1.2	03/14/19 19:39	
EPA 353.2	Nitrogen, NO2 plus NO3	9.0	mg/L	1.0	03/16/19 12:31	
SM 5310C	Total Organic Carbon	1.7	mg/L	1.0	03/18/19 18:01	B
10466793006	**MW7S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	34.8J	ug/L	200	03/21/19 11:42	
EPA 6010D	Barium, Dissolved	60.8	ug/L	10.0	03/21/19 11:42	
EPA 6010D	Calcium, Dissolved	49700	ug/L	500	03/21/19 11:42	
EPA 6010D	Cobalt, Dissolved	6.9J	ug/L	10.0	03/21/19 11:42	
EPA 6010D	Iron, Dissolved	258	ug/L	50.0	03/21/19 11:42	
EPA 6010D	Lead, Dissolved	5.0J	ug/L	10.0	03/21/19 11:42	
EPA 6010D	Magnesium, Dissolved	14000	ug/L	500	03/21/19 11:42	
EPA 6010D	Manganese, Dissolved	975	ug/L	5.0	03/21/19 11:42	
EPA 6010D	Nickel, Dissolved	3.5J	ug/L	20.0	03/21/19 11:42	
EPA 6010D	Potassium, Dissolved	5430	ug/L	2500	03/21/19 11:42	
EPA 6010D	Sodium, Dissolved	30100	ug/L	1000	03/21/19 11:42	
EPA 6010D	Thallium, Dissolved	8.4J	ug/L	20.0	03/21/19 11:42	B
EPA 6010D	Vanadium, Dissolved	0.84J	ug/L	15.0	03/21/19 11:42	
EPA 6010D	Zinc, Dissolved	41.5	ug/L	20.0	03/21/19 11:42	
EPA 8260B	2-Butanone (MEK)	69.6	ug/L	5.0	03/15/19 13:56	
EPA 8260B	Acetone	33.2	ug/L	20.0	03/15/19 13:56	

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466793006	**MW7S-GW-031319**					
EPA 8260B	Carbon tetrachloride	1.0	ug/L	0.50	03/15/19 13:56	
EPA 8260B	Toluene	0.098J	ug/L	0.50	03/15/19 13:56	
SM 2320B	Alkalinity, Total as CaCO3	141	mg/L	5.0	03/26/19 13:04	
SM 2540C	Total Dissolved Solids	344	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	79.9	mg/L	1.2	03/14/19 19:54	
EPA 300.0	Nitrate as N	0.054J	mg/L	0.10	03/14/19 19:54	
EPA 300.0	Sulfate	10.9	mg/L	1.2	03/14/19 19:54	
EPA 353.2	Nitrogen, NO2 plus NO3	0.42	mg/L	0.10	03/16/19 12:00	FS
EPA 410.4	Chemical Oxygen Demand	77.3	mg/L	50.0	03/20/19 14:27	
SM 5310C	Total Organic Carbon	18.5	mg/L	1.0	03/18/19 18:13	
10466793007	**MW1S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	90.6J	ug/L	200	03/21/19 11:44	
EPA 6010D	Barium, Dissolved	222	ug/L	10.0	03/21/19 11:44	
EPA 6010D	Calcium, Dissolved	114000	ug/L	500	03/21/19 11:44	
EPA 6010D	Cobalt, Dissolved	0.89J	ug/L	10.0	03/21/19 11:44	
EPA 6010D	Iron, Dissolved	65.7	ug/L	50.0	03/21/19 11:44	
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	03/21/19 11:44	
EPA 6010D	Magnesium, Dissolved	30700	ug/L	500	03/21/19 11:44	
EPA 6010D	Manganese, Dissolved	3.5J	ug/L	5.0	03/21/19 11:44	
EPA 6010D	Potassium, Dissolved	324J	ug/L	2500	03/21/19 11:44	
EPA 6010D	Sodium, Dissolved	38600	ug/L	1000	03/21/19 11:44	
EPA 6010D	Thallium, Dissolved	8.4J	ug/L	20.0	03/21/19 11:44	B
EPA 6010D	Vanadium, Dissolved	10.1J	ug/L	15.0	03/21/19 11:44	
EPA 6010D	Zinc, Dissolved	12.9J	ug/L	20.0	03/21/19 11:44	
SM 2320B	Alkalinity, Total as CaCO3	503	mg/L	5.0	03/26/19 13:08	
SM 2540C	Total Dissolved Solids	577	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	7.8	mg/L	1.2	03/14/19 20:09	
EPA 300.0	Nitrate as N	0.060J	mg/L	0.10	03/14/19 20:09	
EPA 300.0	Sulfate	20.0	mg/L	1.2	03/14/19 20:09	
EPA 353.2	Nitrogen, NO2 plus NO3	0.039J	mg/L	0.10	03/16/19 12:01	FS
EPA 410.4	Chemical Oxygen Demand	89.8	mg/L	50.0	03/20/19 14:27	
SM 5310C	Total Organic Carbon	10.1	mg/L	1.0	03/18/19 18:27	
10466793008	**MW10S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	103J	ug/L	200	03/21/19 11:46	
EPA 6010D	Barium, Dissolved	26.4	ug/L	10.0	03/21/19 11:46	
EPA 6010D	Beryllium, Dissolved	0.12J	ug/L	5.0	03/21/19 11:46	
EPA 6010D	Calcium, Dissolved	72800	ug/L	500	03/21/19 11:46	
EPA 6010D	Cobalt, Dissolved	0.67J	ug/L	10.0	03/21/19 11:46	
EPA 6010D	Copper, Dissolved	7.4J	ug/L	10.0	03/21/19 11:46	
EPA 6010D	Iron, Dissolved	127	ug/L	50.0	03/21/19 11:46	
EPA 6010D	Lead, Dissolved	2.8J	ug/L	10.0	03/21/19 11:46	
EPA 6010D	Magnesium, Dissolved	20300	ug/L	500	03/21/19 11:46	
EPA 6010D	Manganese, Dissolved	4.2J	ug/L	5.0	03/21/19 11:46	
EPA 6010D	Sodium, Dissolved	13600	ug/L	1000	03/21/19 11:46	
EPA 6010D	Thallium, Dissolved	5.0J	ug/L	20.0	03/21/19 11:46	B
EPA 6010D	Vanadium, Dissolved	3.2J	ug/L	15.0	03/21/19 11:46	

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SUMMARY OF DETECTION

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466793008	**MW10S-GW-031319**					
EPA 6010D	Zinc, Dissolved	6.2J	ug/L	20.0	03/21/19 11:46	
SM 2320B	Alkalinity, Total as CaCO3	328	mg/L	5.0	03/26/19 13:12	
SM 2540C	Total Dissolved Solids	344	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	0.69J	mg/L	1.2	03/14/19 20:24	
EPA 300.0	Nitrate as N	0.17	mg/L	0.10	03/14/19 20:24	
EPA 300.0	Sulfate	8.0	mg/L	1.2	03/14/19 20:24	
EPA 353.2	Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	03/16/19 12:02	
SM 5310C	Total Organic Carbon	0.96J	mg/L	1.0	03/18/19 18:40	B
10466793009	**MW6S-GW-031319**					
EPA 6010D	Aluminum, Dissolved	87.1J	ug/L	200	03/21/19 11:47	
EPA 6010D	Barium, Dissolved	36.8	ug/L	10.0	03/21/19 11:47	
EPA 6010D	Calcium, Dissolved	32900	ug/L	500	03/21/19 11:47	
EPA 6010D	Cobalt, Dissolved	0.54J	ug/L	10.0	03/21/19 11:47	
EPA 6010D	Iron, Dissolved	91.5	ug/L	50.0	03/21/19 11:47	
EPA 6010D	Magnesium, Dissolved	9250	ug/L	500	03/21/19 11:47	
EPA 6010D	Manganese, Dissolved	1.8J	ug/L	5.0	03/21/19 11:47	
EPA 6010D	Potassium, Dissolved	360J	ug/L	2500	03/21/19 11:47	
EPA 6010D	Sodium, Dissolved	11200	ug/L	1000	03/21/19 11:47	
EPA 6010D	Vanadium, Dissolved	4.6J	ug/L	15.0	03/21/19 11:47	
EPA 6010D	Zinc, Dissolved	11.0J	ug/L	20.0	03/21/19 11:47	
SM 2320B	Alkalinity, Total as CaCO3	146	mg/L	5.0	03/26/19 13:17	
SM 2540C	Total Dissolved Solids	203	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	1.5	mg/L	1.2	03/14/19 20:40	
EPA 300.0	Nitrate as N	0.21	mg/L	0.10	03/14/19 20:40	
EPA 300.0	Sulfate	1.6	mg/L	1.2	03/14/19 20:40	
EPA 353.2	Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	03/16/19 12:03	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	03/18/19 19:19	
10466793010	**MW12S-GW-031319**					
EPA 6010D	Barium, Dissolved	190	ug/L	10.0	03/21/19 11:54	
EPA 6010D	Calcium, Dissolved	75000	ug/L	500	03/21/19 11:54	
EPA 6010D	Cobalt, Dissolved	0.86J	ug/L	10.0	03/21/19 11:54	
EPA 6010D	Iron, Dissolved	4.8J	ug/L	50.0	03/21/19 11:54	B
EPA 6010D	Magnesium, Dissolved	21900	ug/L	500	03/21/19 11:54	
EPA 6010D	Manganese, Dissolved	2.6J	ug/L	5.0	03/21/19 11:54	
EPA 6010D	Sodium, Dissolved	35100	ug/L	1000	03/21/19 11:54	
EPA 6010D	Thallium, Dissolved	7.4J	ug/L	20.0	03/21/19 11:54	B
EPA 6010D	Vanadium, Dissolved	4.0J	ug/L	15.0	03/21/19 11:54	
EPA 6010D	Zinc, Dissolved	3.5J	ug/L	20.0	03/21/19 11:54	
SM 2320B	Alkalinity, Total as CaCO3	249	mg/L	5.0	03/26/19 13:21	
SM 2540C	Total Dissolved Solids	474	mg/L	10.0	03/20/19 13:45	
EPA 300.0	Chloride	40.8	mg/L	1.2	03/14/19 21:10	
EPA 300.0	Nitrate as N	7.0	mg/L	0.10	03/14/19 21:10	
EPA 300.0	Sulfate	39.5	mg/L	1.2	03/14/19 21:10	
EPA 353.2	Nitrogen, NO2 plus NO3	7.3	mg/L	1.0	03/16/19 12:32	
SM 5310C	Total Organic Carbon	2.9	mg/L	1.0	03/18/19 19:32	

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **RSK 175**
Description: RSK 175 GCV Headspace
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 6010D**
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 593890

B: Analyte was detected in the associated method blank.
- BLANK for HBN 593890 [MPRP/907 (Lab ID: 3211017)
  - Iron, Dissolved
  - Thallium, Dissolved

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 7470A**
Description: 7470A Mercury, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
11 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 593946

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- LCS (Lab ID: 3211295)
  - Carbon disulfide
- MS (Lab ID: 3211296)
  - Carbon disulfide
- MSD (Lab ID: 3211297)
  - Carbon disulfide

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 593946

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
- LCS (Lab ID: 3211295)
  - Carbon disulfide

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

QC Batch: 593946

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10466781001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3211296)
  - Carbon disulfide
- MSD (Lab ID: 3211297)
  - Carbon disulfide

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3211296)
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - 1,1-Dichloropropene
  - 2,2,4-Trimethylpentane
  - Acrolein
  - Chloroethane
  - Methylene Chloride
  - trans-1,2-Dichloroethene
- MSD (Lab ID: 3211297)
  - 1,1-Dichloropropene
  - 2,2,4-Trimethylpentane
  - Acrolein
  - Chloroethane

Additional Comments:

Analyte Comments:

QC Batch: 593946

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3211294)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3211295)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MS (Lab ID: 3211296)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3211297)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

Analyte Comments:

QC Batch: 593946

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- MW10S-GW-031319 (Lab ID: 10466793008)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW11S-GW-031319 (Lab ID: 10466793001)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW12S-GW-031319 (Lab ID: 10466793010)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW1S-GW-031319 (Lab ID: 10466793007)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW24S-GW-031319 (Lab ID: 10466793004)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW25S-GW-031319 (Lab ID: 10466793003)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW6S-GW-031319 (Lab ID: 10466793009)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW7S-GW-031319 (Lab ID: 10466793006)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW8S-GW-031319 (Lab ID: 10466793005)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- MW9S-GW-031319 (Lab ID: 10466793002)
  - 1,2-Dichloroethene (Total)
  - Dichlorofluoromethane
  - 2,2,4-Trimethylpentane
- TB-031319 (Lab ID: 10466793011)
  - 1,2-Dichloroethene (Total)

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 8260B**
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

Analyte Comments:

QC Batch: 593946

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- TB-031319 (Lab ID: 10466793011)
    - Dichlorofluoromethane
    - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 594667

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 3214882)
  - Total Dissolved Solids
- DUP (Lab ID: 3214883)
  - Total Dissolved Solids

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 136633

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10466793001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 594437)
  - Sulfide, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 593845

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10466793001,10466793002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3210652)
  - Chloride
  - Nitrate as N
  - Sulfate
- MS (Lab ID: 3210654)
  - Nitrate as N
- MSD (Lab ID: 3210653)
  - Chloride
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 3210655)
  - Nitrate as N

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 3210654)
  - Chloride
- MSD (Lab ID: 3210655)
  - Chloride

Additional Comments:

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PROJECT NARRATIVE

Project:	Freeman WA-Grain Handling Faci
Pace Project No.:	10466793

Method: **EPA 353.2**
Description: 353.2 Nitrate + Nitrite
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **EPA 410.4**
Description: 410.4 COD
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Method: **SM 5310C**
Description: 5310C TOC
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:
10 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 162801

B: Analyte was detected in the associated method blank.
- BLANK for HBN 162801 [WETA/265 (Lab ID: 641741)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW11S-GW-031319 **Lab ID: 10466793001** Collected: 03/13/19 10:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 09:22	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 09:22	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 09:22	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**43.5J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:21	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:21	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:21	7440-38-2	
Barium, Dissolved	**43.9**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:21	7440-39-3	
Beryllium, Dissolved	**0.18J**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:21	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:21	7440-43-9	
Calcium, Dissolved	**46100**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:21	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:21	7440-47-3	
Cobalt, Dissolved	**0.72J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:21	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:21	7440-50-8	
Iron, Dissolved	**66.2**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:21	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:21	7439-92-1	
Magnesium, Dissolved	**12600**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:21	7439-95-4	
Manganese, Dissolved	**8.0**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:21	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:21	7440-02-0	
Potassium, Dissolved	**620J**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:21	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:21	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:21	7440-22-4	
Sodium, Dissolved	**18500**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:21	7440-23-5	
Thallium, Dissolved	**7.1J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:21	7440-28-0	B
Vanadium, Dissolved	**6.5J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:21	7440-62-2	
Zinc, Dissolved	**10.3J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:21	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 12:57	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:58	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:58	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 11:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 11:58	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:58	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:58	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 11:58	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 11:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 11:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 11:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 11:58	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW11S-GW-031319 **Lab ID: 10466793001** Collected: 03/13/19 10:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:58	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 11:58	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 11:58	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 11:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 11:58	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:58	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 11:58	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:58	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 11:58	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 11:58	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 11:58	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 11:58	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:58	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 11:58	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 11:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 11:58	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 11:58	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 11:58	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 11:58	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 11:58	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 11:58	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 11:58	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 11:58	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 11:58	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 11:58	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 11:58	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 11:58	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:58	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 11:58	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 11:58	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 11:58	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 11:58	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 11:58	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 11:58	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 11:58	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 11:58	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 11:58	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 11:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 11:58	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:58	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 11:58	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 11:58	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 11:58	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:58	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 11:58	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW11S-GW-031319 **Lab ID: 10466793001** Collected: 03/13/19 10:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 11:58	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 11:58	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 11:58	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 11:58	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 11:58	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 11:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 11:58	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:58	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 11:58	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 11:58	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 11:58	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:58	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 11:58	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 11:58	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 11:58	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 11:58	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 11:58	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 11:58	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 11:58	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 11:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-136		1		03/15/19 11:58	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 11:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/19 11:58	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**213**	mg/L	5.0	1.0	1		03/26/19 12:19		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**238**	mg/L	20.0	10.0	1		03/19/19 16:55		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.011J**	mg/L	0.020	0.0054	1		03/19/19 10:25	18496-25-8	M1
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.6**	mg/L	1.2	0.28	1		03/14/19 16:14	16887-00-6	M1
Nitrate as N	**<0.015**	mg/L	0.10	0.015	1		03/14/19 16:14	14797-55-8	M1
Sulfate	**4.2**	mg/L	1.2	0.19	1		03/14/19 16:14	14808-79-8	M1
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.028J**	mg/L	0.10	0.018	1		03/16/19 11:50		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:24		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW11S-GW-031319 **Lab ID: 10466793001** Collected: 03/13/19 10:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.8**	mg/L	2.0	0.40	2		03/19/19 09:07	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW9S-GW-031319 **Lab ID: 10466793002** Collected: 03/13/19 11:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 09:29	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 09:29	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 09:29	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**92.5J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:36	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:36	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:36	7440-38-2	
Barium, Dissolved	**113**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:36	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:36	7440-41-7	
Cadmium, Dissolved	**0.55J**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:36	7440-43-9	
Calcium, Dissolved	**95600**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:36	7440-70-2	
Chromium, Dissolved	**0.61J**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:36	7440-47-3	
Cobalt, Dissolved	**2.7J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:36	7440-48-4	
Copper, Dissolved	**1.9J**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:36	7440-50-8	
Iron, Dissolved	**790**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:36	7439-89-6	
Lead, Dissolved	**2.2J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:36	7439-92-1	
Magnesium, Dissolved	**27300**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:36	7439-95-4	
Manganese, Dissolved	**70.0**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:36	7439-96-5	
Nickel, Dissolved	**2.9J**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:36	7440-02-0	
Potassium, Dissolved	**2770**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:36	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:36	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:36	7440-22-4	
Sodium, Dissolved	**104000**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:36	7440-23-5	
Thallium, Dissolved	**6.2J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:36	7440-28-0	B
Vanadium, Dissolved	**2.1J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:36	7440-62-2	
Zinc, Dissolved	**8.0J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:36	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 12:59	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:21	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:21	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:21	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 12:21	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 12:21	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:21	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:21	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:21	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 12:21	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 12:21	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:21	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 12:21	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 12:21	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 12:21	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW9S-GW-031319 **Lab ID: 10466793002** Collected: 03/13/19 11:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:21	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 12:21	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 12:21	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 12:21	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 12:21	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:21	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 12:21	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:21	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 12:21	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 12:21	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 12:21	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 12:21	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:21	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 12:21	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 12:21	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 12:21	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 12:21	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 12:21	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 12:21	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 12:21	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 12:21	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 12:21	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 12:21	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 12:21	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 12:21	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 12:21	75-15-0	
Carbon tetrachloride	**326**	ug/L	1.0	0.38	2		03/18/19 17:03	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:21	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 12:21	75-00-3	
Chloroform	**51.4**	ug/L	4.0	0.45	1		03/15/19 12:21	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 12:21	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 12:21	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 12:21	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 12:21	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 12:21	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 12:21	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 12:21	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:21	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 12:21	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 12:21	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:21	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 12:21	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 12:21	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 12:21	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:21	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 12:21	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW9S-GW-031319 **Lab ID: 10466793002** Collected: 03/13/19 11:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 12:21	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 12:21	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 12:21	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 12:21	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 12:21	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 12:21	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 12:21	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:21	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 12:21	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 12:21	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 12:21	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:21	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 12:21	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 12:21	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 12:21	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 12:21	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 12:21	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 12:21	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 12:21	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 12:21	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%.	75-136		1		03/15/19 12:21	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 12:21	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		03/15/19 12:21	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**84.4**	mg/L	5.0	1.0	1		03/26/19 12:51		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**892**	mg/L	20.0	10.0	1		03/19/19 16:55		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:30	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**328**	mg/L	12.0	2.8	10		03/15/19 06:22	16887-00-6	M6
Sulfate	**59.5**	mg/L	6.0	0.96	5		03/15/19 00:20	14808-79-8	
Nitrate as N	**11.2**	mg/L	0.50	0.073	5		03/15/19 00:20	14797-55-8	M1
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**12.4**	mg/L	1.0	0.18	10		03/16/19 12:29		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**22.7J**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:24		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW9S-GW-031319 **Lab ID: 10466793002** Collected: 03/13/19 11:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.20	1		03/18/19 17:21	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Sample: MW25S-GW-031319 **Lab ID: 10466793003** Collected: 03/13/19 11:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 09:36	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 09:36	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 09:36	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**113J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:37	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:37	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:37	7440-38-2	
Barium, Dissolved	**136**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:37	7440-39-3	
Beryllium, Dissolved	**0.17J**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:37	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:37	7440-43-9	
Calcium, Dissolved	**74600**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:37	7440-70-2	
Chromium, Dissolved	**2.6J**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:37	7440-47-3	
Cobalt, Dissolved	**3.4J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:37	7440-48-4	
Copper, Dissolved	**5.0J**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:37	7440-50-8	
Iron, Dissolved	**331**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:37	7439-89-6	
Lead, Dissolved	**2.8J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:37	7439-92-1	
Magnesium, Dissolved	**70100**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:37	7439-95-4	
Manganese, Dissolved	**167**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:37	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:37	7440-02-0	
Potassium, Dissolved	**11200**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:37	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:37	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:37	7440-22-4	
Sodium, Dissolved	**679000**	ug/L	10000	215	10	03/15/19 13:50	03/21/19 11:56	7440-23-5	
Thallium, Dissolved	**5.9J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:37	7440-28-0	B
Vanadium, Dissolved	**2.8J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:37	7440-62-2	
Zinc, Dissolved	**3.7J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:37	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:05	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:45	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:45	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:45	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 12:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 12:45	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:45	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:45	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:45	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 12:45	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 12:45	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:45	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 12:45	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 12:45	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 12:45	106-93-4	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW25S-GW-031319 **Lab ID: 10466793003** Collected: 03/13/19 11:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:45	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 12:45	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 12:45	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 12:45	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 12:45	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:45	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 12:45	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:45	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 12:45	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 12:45	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 12:45	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 12:45	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:45	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 12:45	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 12:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 12:45	108-10-1	
Acetone	**11.5J**	ug/L	20.0	9.2	1		03/15/19 12:45	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 12:45	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 12:45	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 12:45	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 12:45	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 12:45	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 12:45	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 12:45	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 12:45	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 12:45	75-15-0	
Carbon tetrachloride	**34.0**	ug/L	0.50	0.19	1		03/15/19 12:45	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:45	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 12:45	75-00-3	
Chloroform	**8.9**	ug/L	4.0	0.45	1		03/15/19 12:45	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 12:45	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 12:45	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 12:45	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 12:45	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 12:45	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 12:45	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 12:45	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 12:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 12:45	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 12:45	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:45	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 12:45	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 12:45	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 12:45	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 12:45	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 12:45	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW25S-GW-031319 **Lab ID: 10466793003** Collected: 03/13/19 11:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 12:45	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 12:45	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 12:45	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 12:45	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 12:45	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 12:45	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 12:45	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 12:45	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 12:45	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 12:45	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 12:45	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 12:45	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 12:45	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 12:45	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 12:45	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 12:45	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 12:45	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 12:45	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 12:45	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 12:45	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-136		1		03/15/19 12:45	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 12:45	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/15/19 12:45	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**83.3**	mg/L	5.0	1.0	1		03/26/19 12:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2060**	mg/L	100	50.0	1		03/20/19 13:45		D6
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:34	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1280**	mg/L	24.0	5.6	20		03/15/19 11:33	16887-00-6	
Nitrate as N	**1.4**	mg/L	0.10	0.015	1		03/14/19 18:23	14797-55-8	
Sulfate	**60.5**	mg/L	1.2	0.19	1		03/14/19 18:23	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.4**	mg/L	0.10	0.018	1		03/16/19 11:54		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**104**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:27		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW25S-GW-031319 **Lab ID: 10466793003** Collected: 03/13/19 11:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**12.8**	mg/L	1.0	0.20	1		03/18/19 17:35	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Sample: MW24S-GW-031319 **Lab ID: 10466793004** Collected: 03/13/19 12:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 09:43	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 09:43	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 09:43	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**64.4J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:39	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:39	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:39	7440-38-2	
Barium, Dissolved	**116**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:39	7440-39-3	
Beryllium, Dissolved	**0.19J**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:39	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:39	7440-43-9	
Calcium, Dissolved	**64600**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:39	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:39	7440-47-3	
Cobalt, Dissolved	**5.9J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:39	7440-48-4	
Copper, Dissolved	**4.0J**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:39	7440-50-8	
Iron, Dissolved	**295**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:39	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:39	7439-92-1	
Magnesium, Dissolved	**45900**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:39	7439-95-4	
Manganese, Dissolved	**392**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:39	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:39	7440-02-0	
Potassium, Dissolved	**4090**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:39	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:39	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:39	7440-22-4	
Sodium, Dissolved	**125000**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:39	7440-23-5	
Thallium, Dissolved	**5.1J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:39	7440-28-0	B
Vanadium, Dissolved	**1.8J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:39	7440-62-2	
Zinc, Dissolved	**7.3J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:39	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:07	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:08	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:08	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:08	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:08	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 13:08	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:08	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:08	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:08	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:08	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 13:08	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:08	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 13:08	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 13:08	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 13:08	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW24S-GW-031319 **Lab ID: 10466793004** Collected: 03/13/19 12:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:08	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:08	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:08	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:08	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 13:08	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:08	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 13:08	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:08	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 13:08	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 13:08	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 13:08	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 13:08	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:08	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 13:08	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 13:08	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 13:08	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 13:08	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:08	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 13:08	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:08	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:08	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:08	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:08	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 13:08	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 13:08	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 13:08	75-15-0	
Carbon tetrachloride	**66.5**	ug/L	0.50	0.19	1		03/15/19 13:08	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:08	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 13:08	75-00-3	
Chloroform	**41.7**	ug/L	4.0	0.45	1		03/15/19 13:08	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:08	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:08	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 13:08	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 13:08	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 13:08	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 13:08	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:08	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:08	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:08	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:08	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:08	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 13:08	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 13:08	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 13:08	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:08	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 13:08	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW24S-GW-031319 **Lab ID: 10466793004** Collected: 03/13/19 12:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 13:08	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 13:08	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 13:08	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 13:08	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 13:08	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 13:08	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:08	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:08	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:08	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 13:08	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:08	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:08	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:08	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:08	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 13:08	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:08	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:08	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:08	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:08	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 13:08	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-136		1		03/15/19 13:08	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/15/19 13:08	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/15/19 13:08	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**118**	mg/L	5.0	1.0	1		03/26/19 12:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**844**	mg/L	40.0	20.0	1		03/20/19 13:45		D6
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:43	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**327**	mg/L	6.0	1.4	5		03/14/19 23:44	16887-00-6	
Nitrate as N	**3.7**	mg/L	0.10	0.015	1		03/14/19 19:24	14797-55-8	
Sulfate	**50.9**	mg/L	1.2	0.19	1		03/14/19 19:24	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.7**	mg/L	0.50	0.088	5		03/16/19 12:30		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**77.8**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:27		

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW24S-GW-031319 **Lab ID: 10466793004** Collected: 03/13/19 12:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**11.7**	mg/L	1.0	0.20	1		03/18/19 17:48	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW8S-GW-031319 **Lab ID: 10466793005** Collected: 03/13/19 12:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 09:50	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 09:50	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 09:50	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:41	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:41	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:41	7440-38-2	
Barium, Dissolved	**31.9**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:41	7440-39-3	
Beryllium, Dissolved	**0.19J**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:41	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:41	7440-43-9	
Calcium, Dissolved	**44300**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:41	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:41	7440-47-3	
Cobalt, Dissolved	**<0.50**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:41	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:41	7440-50-8	
Iron, Dissolved	**17.0J**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:41	7439-89-6	B
Lead, Dissolved	**2.7J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:41	7439-92-1	
Magnesium, Dissolved	**10300**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:41	7439-95-4	
Manganese, Dissolved	**9.6**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:41	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:41	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:41	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:41	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:41	7440-22-4	
Sodium, Dissolved	**11200**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:41	7440-23-5	
Thallium, Dissolved	**7.8J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:41	7440-28-0	B
Vanadium, Dissolved	**1.5J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:41	7440-62-2	
Zinc, Dissolved	**8.6J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:41	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:13	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:32	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:32	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:32	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:32	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 13:32	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:32	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:32	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:32	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:32	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 13:32	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:32	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 13:32	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 13:32	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 13:32	106-93-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW8S-GW-031319 **Lab ID: 10466793005** Collected: 03/13/19 12:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:32	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:32	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:32	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:32	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 13:32	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:32	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 13:32	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:32	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 13:32	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 13:32	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 13:32	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 13:32	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:32	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 13:32	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 13:32	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 13:32	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 13:32	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:32	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 13:32	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:32	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:32	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:32	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:32	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 13:32	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 13:32	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 13:32	75-15-0	
Carbon tetrachloride	**214**	ug/L	0.50	0.19	1		03/15/19 13:32	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:32	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 13:32	75-00-3	
Chloroform	**51.4**	ug/L	4.0	0.45	1		03/15/19 13:32	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:32	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:32	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 13:32	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 13:32	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 13:32	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 13:32	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:32	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:32	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:32	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:32	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:32	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 13:32	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 13:32	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 13:32	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:32	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 13:32	109-99-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW8S-GW-031319 **Lab ID: 10466793005** Collected: 03/13/19 12:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 13:32	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 13:32	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 13:32	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 13:32	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 13:32	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 13:32	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:32	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:32	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:32	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 13:32	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:32	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:32	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:32	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:32	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 13:32	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:32	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:32	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:32	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:32	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 13:32	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-136		1		03/15/19 13:32	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/15/19 13:32	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/19 13:32	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**133**	mg/L	5.0	1.0	1		03/26/19 13:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**281**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:44	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**3.0**	mg/L	1.2	0.28	1		03/14/19 19:39	16887-00-6	
Nitrate as N	**8.3**	mg/L	0.20	0.029	2		03/15/19 00:02	14797-55-8	
Sulfate	**19.6**	mg/L	1.2	0.19	1		03/14/19 19:39	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**9.0**	mg/L	1.0	0.18	10		03/16/19 12:31		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:27		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW8S-GW-031319 **Lab ID: 10466793005** Collected: 03/13/19 12:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.20	1		03/18/19 18:01	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW7S-GW-031319 **Lab ID: 10466793006** Collected: 03/13/19 13:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 10:40	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 10:40	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 10:40	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**34.8J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:42	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:42	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:42	7440-38-2	
Barium, Dissolved	**60.8**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:42	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:42	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:42	7440-43-9	
Calcium, Dissolved	**49700**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:42	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:42	7440-47-3	
Cobalt, Dissolved	**6.9J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:42	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:42	7440-50-8	
Iron, Dissolved	**258**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:42	7439-89-6	
Lead, Dissolved	**5.0J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:42	7439-92-1	
Magnesium, Dissolved	**14000**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:42	7439-95-4	
Manganese, Dissolved	**975**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:42	7439-96-5	
Nickel, Dissolved	**3.5J**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:42	7440-02-0	
Potassium, Dissolved	**5430**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:42	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:42	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:42	7440-22-4	
Sodium, Dissolved	**30100**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:42	7440-23-5	
Thallium, Dissolved	**8.4J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:42	7440-28-0	B
Vanadium, Dissolved	**0.84J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:42	7440-62-2	
Zinc, Dissolved	**41.5**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:42	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:15	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:56	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:56	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:56	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:56	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 13:56	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:56	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:56	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:56	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:56	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 13:56	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:56	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 13:56	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 13:56	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 13:56	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW7S-GW-031319 **Lab ID: 10466793006** Collected: 03/13/19 13:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:56	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:56	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:56	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:56	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 13:56	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:56	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 13:56	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:56	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 13:56	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 13:56	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 13:56	594-20-7	
2-Butanone (MEK)	**69.6**	ug/L	5.0	0.99	1		03/15/19 13:56	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:56	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 13:56	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 13:56	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 13:56	108-10-1	
Acetone	**33.2**	ug/L	20.0	9.2	1		03/15/19 13:56	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:56	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 13:56	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:56	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 13:56	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 13:56	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 13:56	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 13:56	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 13:56	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 13:56	75-15-0	
Carbon tetrachloride	**1.0**	ug/L	0.50	0.19	1		03/15/19 13:56	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:56	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 13:56	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 13:56	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 13:56	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:56	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 13:56	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 13:56	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 13:56	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 13:56	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 13:56	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 13:56	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:56	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:56	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:56	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 13:56	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 13:56	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 13:56	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 13:56	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 13:56	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW7S-GW-031319 **Lab ID: 10466793006** Collected: 03/13/19 13:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**0.098J**	ug/L	0.50	0.083	1		03/15/19 13:56	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 13:56	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 13:56	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 13:56	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 13:56	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 13:56	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:56	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 13:56	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 13:56	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 13:56	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 13:56	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 13:56	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:56	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 13:56	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 13:56	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 13:56	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 13:56	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 13:56	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 13:56	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 13:56	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-136		1		03/15/19 13:56	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 13:56	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/19 13:56	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**141**	mg/L	5.0	1.0	1		03/26/19 13:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**344**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:44	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**79.9**	mg/L	1.2	0.28	1		03/14/19 19:54	16887-00-6	
Nitrate as N	**0.054J**	mg/L	0.10	0.015	1		03/14/19 19:54	14797-55-8	
Sulfate	**10.9**	mg/L	1.2	0.19	1		03/14/19 19:54	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.42**	mg/L	0.10	0.018	1		03/16/19 12:00		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**77.3**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:27		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW7S-GW-031319 **Lab ID: 10466793006** Collected: 03/13/19 13:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**18.5**	mg/L	1.0	0.20	1		03/18/19 18:13	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Sample: MW1S-GW-031319 **Lab ID: 10466793007** Collected: 03/13/19 13:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 10:47	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 10:47	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 10:47	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**90.6J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:44	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:44	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:44	7440-38-2	
Barium, Dissolved	**222**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:44	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:44	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:44	7440-43-9	
Calcium, Dissolved	**114000**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:44	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:44	7440-47-3	
Cobalt, Dissolved	**0.89J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:44	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:44	7440-50-8	
Iron, Dissolved	**65.7**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:44	7439-89-6	
Lead, Dissolved	**2.5J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:44	7439-92-1	
Magnesium, Dissolved	**30700**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:44	7439-95-4	
Manganese, Dissolved	**3.5J**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:44	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:44	7440-02-0	
Potassium, Dissolved	**324J**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:44	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:44	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:44	7440-22-4	
Sodium, Dissolved	**38600**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:44	7440-23-5	
Thallium, Dissolved	**8.4J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:44	7440-28-0	B
Vanadium, Dissolved	**10.1J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:44	7440-62-2	
Zinc, Dissolved	**12.9J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:44	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:17	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:19	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:19	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 14:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 14:19	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:19	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:19	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:19	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 14:19	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 14:19	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:19	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 14:19	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 14:19	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 14:19	106-93-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW1S-GW-031319 **Lab ID: 10466793007** Collected: 03/13/19 13:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:19	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 14:19	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 14:19	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 14:19	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 14:19	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:19	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 14:19	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:19	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 14:19	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 14:19	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 14:19	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 14:19	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:19	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 14:19	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 14:19	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 14:19	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 14:19	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 14:19	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 14:19	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 14:19	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 14:19	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 14:19	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 14:19	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 14:19	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 14:19	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 14:19	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 14:19	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:19	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 14:19	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 14:19	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 14:19	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 14:19	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 14:19	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 14:19	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 14:19	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 14:19	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 14:19	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 14:19	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 14:19	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:19	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 14:19	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 14:19	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 14:19	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:19	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 14:19	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Sample: MW1S-GW-031319 **Lab ID: 10466793007** Collected: 03/13/19 13:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 14:19	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 14:19	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 14:19	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 14:19	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 14:19	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 14:19	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 14:19	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:19	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 14:19	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 14:19	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 14:19	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:19	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 14:19	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 14:19	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 14:19	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 14:19	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 14:19	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 14:19	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 14:19	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 14:19	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-136		1		03/15/19 14:19	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 14:19	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/15/19 14:19	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**503**	mg/L	5.0	1.0	1		03/26/19 13:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**577**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:45	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**7.8**	mg/L	1.2	0.28	1		03/14/19 20:09	16887-00-6	
Nitrate as N	**0.060J**	mg/L	0.10	0.015	1		03/14/19 20:09	14797-55-8	
Sulfate	**20.0**	mg/L	1.2	0.19	1		03/14/19 20:09	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.039J**	mg/L	0.10	0.018	1		03/16/19 12:01		FS
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**89.8**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:27		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW1S-GW-031319 **Lab ID: 10466793007** Collected: 03/13/19 13:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**10.1**	mg/L	1.0	0.20	1		03/18/19 18:27	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW10S-GW-031319 **Lab ID: 10466793008** Collected: 03/13/19 14:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 10:15	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 10:15	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 10:15	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**103J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:46	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:46	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:46	7440-38-2	
Barium, Dissolved	**26.4**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:46	7440-39-3	
Beryllium, Dissolved	**0.12J**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:46	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:46	7440-43-9	
Calcium, Dissolved	**72800**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:46	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:46	7440-47-3	
Cobalt, Dissolved	**0.67J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:46	7440-48-4	
Copper, Dissolved	**7.4J**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:46	7440-50-8	
Iron, Dissolved	**127**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:46	7439-89-6	
Lead, Dissolved	**2.8J**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:46	7439-92-1	
Magnesium, Dissolved	**20300**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:46	7439-95-4	
Manganese, Dissolved	**4.2J**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:46	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:46	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:46	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:46	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:46	7440-22-4	
Sodium, Dissolved	**13600**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:46	7440-23-5	
Thallium, Dissolved	**5.0J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:46	7440-28-0	B
Vanadium, Dissolved	**3.2J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:46	7440-62-2	
Zinc, Dissolved	**6.2J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:46	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:19	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:43	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:43	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:43	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 14:43	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 14:43	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:43	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:43	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:43	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 14:43	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 14:43	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:43	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 14:43	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 14:43	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 14:43	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW10S-GW-031319 **Lab ID: 10466793008** Collected: 03/13/19 14:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:43	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 14:43	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 14:43	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 14:43	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 14:43	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:43	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 14:43	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:43	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 14:43	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 14:43	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 14:43	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 14:43	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:43	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 14:43	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 14:43	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 14:43	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 14:43	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 14:43	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 14:43	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 14:43	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 14:43	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 14:43	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 14:43	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 14:43	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 14:43	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 14:43	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 14:43	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:43	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 14:43	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 14:43	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 14:43	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 14:43	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 14:43	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 14:43	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 14:43	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 14:43	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 14:43	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 14:43	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 14:43	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 14:43	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:43	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 14:43	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 14:43	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 14:43	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 14:43	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 14:43	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW10S-GW-031319 **Lab ID: 10466793008** Collected: 03/13/19 14:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 14:43	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 14:43	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 14:43	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 14:43	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 14:43	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 14:43	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 14:43	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 14:43	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 14:43	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 14:43	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 14:43	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 14:43	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 14:43	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 14:43	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 14:43	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 14:43	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 14:43	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 14:43	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 14:43	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 14:43	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	113	%.	75-136		1		03/15/19 14:43	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		03/15/19 14:43	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/15/19 14:43	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**328**	mg/L	5.0	1.0	1		03/26/19 13:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**344**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:45	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**0.69J**	mg/L	1.2	0.28	1		03/14/19 20:24	16887-00-6	
Nitrate as N	**0.17**	mg/L	0.10	0.015	1		03/14/19 20:24	14797-55-8	
Sulfate	**8.0**	mg/L	1.2	0.19	1		03/14/19 20:24	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.20**	mg/L	0.10	0.018	1		03/16/19 12:02		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:28		

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW10S-GW-031319 **Lab ID: 10466793008** Collected: 03/13/19 14:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.96J**	mg/L	1.0	0.20	1		03/18/19 18:40	7440-44-0	B

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW6S-GW-031319 **Lab ID: 10466793009** Collected: 03/13/19 14:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 10:54	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 10:54	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 10:54	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**87.1J**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:47	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:47	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:47	7440-38-2	
Barium, Dissolved	**36.8**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:47	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:47	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:47	7440-43-9	
Calcium, Dissolved	**32900**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:47	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:47	7440-47-3	
Cobalt, Dissolved	**0.54J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:47	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:47	7440-50-8	
Iron, Dissolved	**91.5**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:47	7439-89-6	
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:47	7439-92-1	
Magnesium, Dissolved	**9250**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:47	7439-95-4	
Manganese, Dissolved	**1.8J**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:47	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:47	7440-02-0	
Potassium, Dissolved	**360J**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:47	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:47	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:47	7440-22-4	
Sodium, Dissolved	**11200**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:47	7440-23-5	
Thallium, Dissolved	**<4.3**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:47	7440-28-0	
Vanadium, Dissolved	**4.6J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:47	7440-62-2	
Zinc, Dissolved	**11.0J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:47	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:21	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:07	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:07	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:07	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 15:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 15:07	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:07	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:07	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:07	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 15:07	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 15:07	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:07	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 15:07	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 15:07	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 15:07	106-93-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW6S-GW-031319 **Lab ID: 10466793009** Collected: 03/13/19 14:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:07	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 15:07	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 15:07	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 15:07	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 15:07	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:07	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 15:07	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:07	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 15:07	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 15:07	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 15:07	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 15:07	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:07	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 15:07	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 15:07	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 15:07	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 15:07	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 15:07	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 15:07	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 15:07	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 15:07	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 15:07	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 15:07	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 15:07	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 15:07	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 15:07	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 15:07	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:07	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 15:07	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 15:07	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 15:07	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 15:07	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 15:07	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 15:07	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 15:07	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 15:07	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 15:07	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:07	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 15:07	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 15:07	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:07	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 15:07	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 15:07	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 15:07	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:07	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 15:07	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW6S-GW-031319 **Lab ID: 10466793009** Collected: 03/13/19 14:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 15:07	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 15:07	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 15:07	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 15:07	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 15:07	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 15:07	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 15:07	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:07	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 15:07	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 15:07	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 15:07	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:07	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 15:07	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 15:07	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 15:07	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 15:07	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 15:07	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 15:07	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 15:07	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 15:07	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-136		1		03/15/19 15:07	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/15/19 15:07	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/19 15:07	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**146**	mg/L	5.0	1.0	1		03/26/19 13:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**203**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:46	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.2	0.28	1		03/14/19 20:40	16887-00-6	
Nitrate as N	**0.21**	mg/L	0.10	0.015	1		03/14/19 20:40	14797-55-8	
Sulfate	**1.6**	mg/L	1.2	0.19	1		03/14/19 20:40	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.19**	mg/L	0.10	0.018	1		03/16/19 12:03		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:28		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW6S-GW-031319 **Lab ID: 10466793009** Collected: 03/13/19 14:30 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.20	1		03/18/19 19:19	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW12S-GW-031319 **Lab ID: 10466793010** Collected: 03/13/19 15:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace	Analytical Method: RSK 175								
Methane	**<4.9**	ug/L	10.0	4.9	1		03/15/19 11:01	74-82-8	
Ethane	**<3.0**	ug/L	10.0	3.0	1		03/15/19 11:01	74-84-0	
Ethene	**<2.9**	ug/L	10.0	2.9	1		03/15/19 11:01	74-85-1	
6010D MET ICP, Dissolved	Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Aluminum, Dissolved	**<15.5**	ug/L	200	15.5	1	03/15/19 13:50	03/21/19 11:54	7429-90-5	
Antimony, Dissolved	**<7.0**	ug/L	20.0	7.0	1	03/15/19 13:50	03/21/19 11:54	7440-36-0	
Arsenic, Dissolved	**<3.8**	ug/L	20.0	3.8	1	03/15/19 13:50	03/21/19 11:54	7440-38-2	
Barium, Dissolved	**190**	ug/L	10.0	0.18	1	03/15/19 13:50	03/21/19 11:54	7440-39-3	
Beryllium, Dissolved	**<0.12**	ug/L	5.0	0.12	1	03/15/19 13:50	03/21/19 11:54	7440-41-7	
Cadmium, Dissolved	**<0.26**	ug/L	3.0	0.26	1	03/15/19 13:50	03/21/19 11:54	7440-43-9	
Calcium, Dissolved	**75000**	ug/L	500	13.9	1	03/15/19 13:50	03/21/19 11:54	7440-70-2	
Chromium, Dissolved	**<0.49**	ug/L	10.0	0.49	1	03/15/19 13:50	03/21/19 11:54	7440-47-3	
Cobalt, Dissolved	**0.86J**	ug/L	10.0	0.50	1	03/15/19 13:50	03/21/19 11:54	7440-48-4	
Copper, Dissolved	**<1.2**	ug/L	10.0	1.2	1	03/15/19 13:50	03/21/19 11:54	7440-50-8	
Iron, Dissolved	**4.8J**	ug/L	50.0	4.3	1	03/15/19 13:50	03/21/19 11:54	7439-89-6	B
Lead, Dissolved	**<2.0**	ug/L	10.0	2.0	1	03/15/19 13:50	03/21/19 11:54	7439-92-1	
Magnesium, Dissolved	**21900**	ug/L	500	9.8	1	03/15/19 13:50	03/21/19 11:54	7439-95-4	
Manganese, Dissolved	**2.6J**	ug/L	5.0	0.22	1	03/15/19 13:50	03/21/19 11:54	7439-96-5	
Nickel, Dissolved	**<1.1**	ug/L	20.0	1.1	1	03/15/19 13:50	03/21/19 11:54	7440-02-0	
Potassium, Dissolved	**<310**	ug/L	2500	310	1	03/15/19 13:50	03/21/19 11:54	7440-09-7	
Selenium, Dissolved	**<5.8**	ug/L	20.0	5.8	1	03/15/19 13:50	03/21/19 11:54	7782-49-2	
Silver, Dissolved	**<0.38**	ug/L	10.0	0.38	1	03/15/19 13:50	03/21/19 11:54	7440-22-4	
Sodium, Dissolved	**35100**	ug/L	1000	21.5	1	03/15/19 13:50	03/21/19 11:54	7440-23-5	
Thallium, Dissolved	**7.4J**	ug/L	20.0	4.3	1	03/15/19 13:50	03/21/19 11:54	7440-28-0	B
Vanadium, Dissolved	**4.0J**	ug/L	15.0	0.29	1	03/15/19 13:50	03/21/19 11:54	7440-62-2	
Zinc, Dissolved	**3.5J**	ug/L	20.0	2.5	1	03/15/19 13:50	03/21/19 11:54	7440-66-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	**<0.078**	ug/L	0.20	0.078	1	03/15/19 15:12	03/19/19 13:24	7439-97-6	
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:30	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:30	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:30	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 15:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 15:30	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:30	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:30	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:30	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 15:30	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 15:30	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:30	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 15:30	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 15:30	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 15:30	106-93-4	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW12S-GW-031319 **Lab ID: 10466793010** Collected: 03/13/19 15:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:30	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 15:30	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 15:30	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 15:30	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 15:30	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:30	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 15:30	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:30	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 15:30	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 15:30	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 15:30	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 15:30	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:30	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 15:30	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 15:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 15:30	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 15:30	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 15:30	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 15:30	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 15:30	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 15:30	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 15:30	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 15:30	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 15:30	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 15:30	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 15:30	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 15:30	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:30	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 15:30	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 15:30	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 15:30	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 15:30	124-48-1	
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 15:30	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 15:30	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 15:30	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 15:30	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 15:30	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 15:30	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 15:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 15:30	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:30	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 15:30	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 15:30	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 15:30	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 15:30	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 15:30	109-99-9	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW12S-GW-031319 **Lab ID: 10466793010** Collected: 03/13/19 15:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 15:30	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 15:30	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 15:30	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 15:30	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 15:30	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 15:30	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 15:30	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 15:30	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 15:30	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 15:30	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 15:30	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 15:30	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 15:30	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 15:30	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 15:30	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 15:30	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 15:30	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 15:30	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 15:30	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 15:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-136		1		03/15/19 15:30	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		03/15/19 15:30	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/19 15:30	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**249**	mg/L	5.0	1.0	1		03/26/19 13:21		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**474**	mg/L	10.0	5.0	1		03/20/19 13:45		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**<0.0054**	mg/L	0.020	0.0054	1		03/19/19 10:46	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**40.8**	mg/L	1.2	0.28	1		03/14/19 21:10	16887-00-6	
Nitrate as N	**7.0**	mg/L	0.10	0.015	1		03/14/19 21:10	14797-55-8	
Sulfate	**39.5**	mg/L	1.2	0.19	1		03/14/19 21:10	14808-79-8	
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**7.3**	mg/L	1.0	0.18	10		03/16/19 12:32		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**<17.0**	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:28		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: MW12S-GW-031319 **Lab ID: 10466793010** Collected: 03/13/19 15:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.9**	mg/L	1.0	0.20	1		03/18/19 19:32	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

Sample: TB-031319 **Lab ID: 10466793011** Collected: 03/13/19 08:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
1,1,1,2-Tetrachloroethane	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:10	630-20-6	
1,1,1-Trichloroethane	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:10	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:10	79-34-5	
1,1,2-Trichloroethane	**<0.18**	ug/L	0.50	0.18	1		03/15/19 11:10	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.22**	ug/L	1.0	0.22	1		03/15/19 11:10	76-13-1	
1,1-Dichloroethane	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:10	75-34-3	
1,1-Dichloroethene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:10	75-35-4	
1,1-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:10	563-58-6	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 11:10	87-61-6	
1,2,3-Trichloropropane	**<0.26**	ug/L	4.0	0.26	1		03/15/19 11:10	96-18-4	
1,2,4-Trichlorobenzene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:10	120-82-1	
1,2,4-Trimethylbenzene	**<0.20**	ug/L	1.0	0.20	1		03/15/19 11:10	95-63-6	
1,2-Dibromo-3-chloropropane	**<1.7**	ug/L	4.0	1.7	1		03/15/19 11:10	96-12-8	
1,2-Dibromoethane (EDB)	**<0.24**	ug/L	0.50	0.24	1		03/15/19 11:10	106-93-4	
1,2-Dichlorobenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:10	95-50-1	
1,2-Dichloroethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 11:10	107-06-2	
1,2-Dichloroethene (Total)	**<0.27**	ug/L	1.0	0.27	1		03/15/19 11:10	540-59-0	N2
1,2-Dichloropropane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 11:10	78-87-5	
1,3,5-Trimethylbenzene	**<0.12**	ug/L	1.0	0.12	1		03/15/19 11:10	108-67-8	
1,3-Dichlorobenzene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:10	541-73-1	
1,3-Dichloropropane	**<0.070**	ug/L	0.50	0.070	1		03/15/19 11:10	142-28-9	
1,4-Dichlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:10	106-46-7	
1,4-Dioxane (p-Dioxane)	**<16.3**	ug/L	200	16.3	1		03/15/19 11:10	123-91-1	
2,2,4-Trimethylpentane	**<0.19**	ug/L	4.0	0.19	1		03/15/19 11:10	540-84-1	N2
2,2-Dichloropropane	**<0.17**	ug/L	1.0	0.17	1		03/15/19 11:10	594-20-7	
2-Butanone (MEK)	**<0.99**	ug/L	5.0	0.99	1		03/15/19 11:10	78-93-3	
2-Chlorotoluene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:10	95-49-8	
2-Hexanone	**<0.88**	ug/L	20.0	0.88	1		03/15/19 11:10	591-78-6	
4-Chlorotoluene	**<0.13**	ug/L	0.50	0.13	1		03/15/19 11:10	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<0.42**	ug/L	5.0	0.42	1		03/15/19 11:10	108-10-1	
Acetone	**<9.2**	ug/L	20.0	9.2	1		03/15/19 11:10	67-64-1	
Acrolein	**<1.2**	ug/L	10.0	1.2	1		03/15/19 11:10	107-02-8	
Acrylonitrile	**<0.91**	ug/L	10.0	0.91	1		03/15/19 11:10	107-13-1	
Benzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 11:10	71-43-2	
Bromobenzene	**<0.21**	ug/L	0.50	0.21	1		03/15/19 11:10	108-86-1	
Bromochloromethane	**<0.27**	ug/L	1.0	0.27	1		03/15/19 11:10	74-97-5	
Bromodichloromethane	**<0.22**	ug/L	0.50	0.22	1		03/15/19 11:10	75-27-4	
Bromoform	**<0.80**	ug/L	4.0	0.80	1		03/15/19 11:10	75-25-2	
Bromomethane	**<1.8**	ug/L	4.0	1.8	1		03/15/19 11:10	74-83-9	
Carbon disulfide	**<0.078**	ug/L	1.0	0.078	1		03/15/19 11:10	75-15-0	
Carbon tetrachloride	**<0.19**	ug/L	0.50	0.19	1		03/15/19 11:10	56-23-5	
Chlorobenzene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:10	108-90-7	
Chloroethane	**<0.49**	ug/L	1.0	0.49	1		03/15/19 11:10	75-00-3	
Chloroform	**<0.45**	ug/L	4.0	0.45	1		03/15/19 11:10	67-66-3	
Chloromethane	**<0.16**	ug/L	4.0	0.16	1		03/15/19 11:10	74-87-3	
Dibromochloromethane	**<0.12**	ug/L	0.50	0.12	1		03/15/19 11:10	124-48-1	

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ANALYTICAL RESULTS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Sample: TB-031319 **Lab ID: 10466793011** Collected: 03/13/19 08:00 Received: 03/14/19 11:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level	Analytical Method: EPA 8260B								
Dibromomethane	**<0.16**	ug/L	1.0	0.16	1		03/15/19 11:10	74-95-3	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		03/15/19 11:10	75-71-8	
Dichlorofluoromethane	**<0.14**	ug/L	1.0	0.14	1		03/15/19 11:10	75-43-4	N2
Diisopropyl ether	**<0.13**	ug/L	1.0	0.13	1		03/15/19 11:10	108-20-3	
Ethyl-tert-butyl ether	**<0.18**	ug/L	0.50	0.18	1		03/15/19 11:10	637-92-3	
Ethylbenzene	**<0.14**	ug/L	0.50	0.14	1		03/15/19 11:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 11:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.18**	ug/L	1.0	0.18	1		03/15/19 11:10	98-82-8	
Methyl-tert-butyl ether	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:10	1634-04-4	
Methylene Chloride	**<0.98**	ug/L	4.0	0.98	1		03/15/19 11:10	75-09-2	
Naphthalene	**<0.48**	ug/L	1.0	0.48	1		03/15/19 11:10	91-20-3	
Styrene	**<0.19**	ug/L	1.0	0.19	1		03/15/19 11:10	100-42-5	
Tetrachloroethene	**<0.17**	ug/L	0.50	0.17	1		03/15/19 11:10	127-18-4	
Tetrahydrofuran	**<2.2**	ug/L	10.0	2.2	1		03/15/19 11:10	109-99-9	
Toluene	**<0.083**	ug/L	0.50	0.083	1		03/15/19 11:10	108-88-3	
Trichloroethene	**<0.15**	ug/L	0.40	0.15	1		03/15/19 11:10	79-01-6	
Trichlorofluoromethane	**<0.23**	ug/L	0.50	0.23	1		03/15/19 11:10	75-69-4	
Vinyl acetate	**<1.1**	ug/L	10.0	1.1	1		03/15/19 11:10	108-05-4	
Vinyl chloride	**<0.092**	ug/L	0.20	0.092	1		03/15/19 11:10	75-01-4	
Xylene (Total)	**<0.31**	ug/L	1.5	0.31	1		03/15/19 11:10	1330-20-7	
cis-1,2-Dichloroethene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 11:10	156-59-2	
cis-1,3-Dichloropropene	**<0.20**	ug/L	0.50	0.20	1		03/15/19 11:10	10061-01-5	
m&p-Xylene	**<0.31**	ug/L	1.0	0.31	1		03/15/19 11:10	179601-23-1	
n-Butylbenzene	**<0.24**	ug/L	1.0	0.24	1		03/15/19 11:10	104-51-8	
n-Propylbenzene	**<0.10**	ug/L	0.50	0.10	1		03/15/19 11:10	103-65-1	
o-Xylene	**<0.16**	ug/L	0.50	0.16	1		03/15/19 11:10	95-47-6	
p-Isopropyltoluene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 11:10	99-87-6	
sec-Butylbenzene	**<0.15**	ug/L	1.0	0.15	1		03/15/19 11:10	135-98-8	
tert-Amylmethyl ether	**<0.11**	ug/L	0.50	0.11	1		03/15/19 11:10	994-05-8	
tert-Butyl Alcohol	**<1.2**	ug/L	10.0	1.2	1		03/15/19 11:10	75-65-0	
tert-Butylbenzene	**<0.15**	ug/L	0.50	0.15	1		03/15/19 11:10	98-06-6	
trans-1,2-Dichloroethene	**<0.12**	ug/L	0.50	0.12	1		03/15/19 11:10	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	1.0	0.18	1		03/15/19 11:10	10061-02-6	
trans-1,4-Dichloro-2-butene	**<2.0**	ug/L	10.0	2.0	1		03/15/19 11:10	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-136		1		03/15/19 11:10	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1		03/15/19 11:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		03/15/19 11:10	460-00-4	

REPORT OF LABORATORY ANALYSIS